DOCUMENT RESUME

ED 387 533 TM 024 104

AUTHOR	Green, Patricia J.; And Others
TITLE	Trends among High School Seniors, 1972-1992. National Education Longitudinal Study of 1988. Statistical Analysis Report.
INSTITUTION	National Opinion Research Center, Chicago, Ill.
SPONS AGENCY	National Center for Education Statistics (ED), Washington, DC.
REPORT NO	ISBN-0-16-048126-0; NCES-95-380
PUB DATE	Jun 95
NOTE	208p.
AVAILABLE FROM	U.S. Government Printing Office, Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328.
PUB TYPE	Statistical Data (110) -- Reports - Evaluative/Feasibility (142)
EDRS PRICE	MF01/PC09 Plus Postage.
DESCRIPTORS	*Academic Achievement; Academic Aspiration; Cohort Analysis; College Bound Students; *Course Selection (Students); Educational Change; Educational Experience; Educational History; *Educational Trends; Enrollment; Females; High Schools; *High School Seniors; Longitudinal Studies; Minority Groups; *Racial Differences; Social Class; Trend Analysis; Vocational Education

ABSTRACT

This report presents data from three longitudinal studies conducted by the National Center for Education Statistics. The National Longitudinal Study of the Class of 1972, the High School and Beyond study, and the National Education Longitudinal Study of 1988 (NELS:88) were all designed to assess the educational experiences and achievements of high school students. With each study cohort, the scope of the study was enlarged until the three studies came to provide a rich resource for examining changes in U.S. education in the past 20 years. Enrollment in academic programs had declined from 1972 to 1980, falling from 46 percent to 39 percent, but by 1992, it had returned to its 1972 level, and 48% of seniors were in academic programs. The percentage of seniors in vocational programs has declined from 22% in 1972 to 12% in 1992. The rebound in academic program enrollment is caused primarily by higher enrollment rates among females and minorities. Differences in achievement among racial and ethnic groups are decreasing, but social class distinctions are becoming more marked. In 1992, more students planned to go to college than in 1972, and heightened expectations for graduate degrees became apparent for all racial and ethnic groups. Five appendixes provide 44 supplementary tables and an illustrative figure, information about study methodology, and a list of publications using NELS:88 data. (Contains 21 tables, 9 figures.) (SLD)

ED 387 533

NATIONAL CENTER FOR EDUCATION STATISTICS

Statistical Analysis Report **June 1995**

National Education Longitudinal Study of 1988

Trends Among High School Seniors, 1972–1992

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it

☐ Minor changes have been made to improve reproduction quality

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

U.S. Department of Education
Office of Educational Research and Improvement
NCES 95-380

TM024104

BEST COPY AVAILABLE

NATIONAL CENTER FOR EDUCATION STATISTICS

Statistical Analysis Report June 1995

National Education Longitudinal Study of 1988

Trends Among High School Seniors, 1972–1992

Patricia J. Green
Bernard L. Dugoni
Steven J. Ingels
National Opinion Research Center (NORC)
at the University of Chicago

Peggy Quinn
Project Officer
National Center for Education Statistics

U.S. Department of Education
Office of Educational Research and Improvement NCES 95-380

U.S. Department of Education
Richard W. Riley
Secretary

Office of Educational Research and Improvement
Sharon P. Robinson
Assistant Secretary

National Center for Education Statistics
Emerson J. Elliott
Commissioner

National Center for Education Statistics

The purpose of the Center is to collect and report "statistics and information showing the condition and progress of education in the United States and other nations in order to promote and accelerate the improvement of American education."—Section 402(b) of the National Education Statistics Act of 1994 (20 U.S.C. 9001).

June 1995

Contact:
Peggy Quinn
(202) 219–1743

For sale by the U.S. Government Printing Office
Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328
ISBN 0-16-048126-0

Highlights

This report presents information about three cohorts of high school seniors, those in 1972, 1980, and 1992, and attempts to examine important trends in the areas of high school program enrollment, coursetaking, tested achievement, plans for postsecondary education, and plans for the future in general.

High School Program

During the twenty-year period from 1972 to 1992, several discernible shifts occurred in high school program placement:

- Enrollment in academic programs declined between 1972 and 1980, falling from 46 percent to 39 percent. However, by 1992, enrollment had returned to its 1972 level--48 percent of seniors were in academic programs.

- The percentage of seniors in vocational programs has declined significantly from 22 percent in 1972 (and 24 percent in 1980) to 12 percent in 1992.

- The proportion of seniors in general high school programs increased from 32 percent in 1972 to 40 percent in 1992.

The rebound in academic program enrollment is fueled primarily by the higher enrollment rates among females and minorities.

- While the percentage of males enrolled in academic programs declined from 48 percent in 1972 to 39 percent in 1980, by 1992 the percentage had returned to approximately the same level (47 percent). The percentage of females in these programs has increased, from 43 percent in 1972 to 49 percent in 1992.

- There has been no increase in the percentage of white students enrolled in academic programs (50 percent in 1992). However, the percentage of blacks increased from 33 percent in 1972 to 43 percent in 1992, and the percentage of Hispanics increased from 27 percent in 1972 to 35 percent in 1992. The proportion of Asians enrolled in college preparatory programs has remained relatively stable (56 percent in 1992).

Courses Completed by High School Graduates

In 1983, *A Nation at Risk* brought to the forefront concern about the curriculum and standards of U.S. schools. In this book, the Commission on Excellence in Education recommended that all high school students complete at least four years of English, three years of social studies, three years of mathematics, and three years of science. As a result of this movement, tougher curricular standards can be seen by comparing the coursework completed by high school graduates in 1982 and 1992.

- The proportion of high school graduates who met the minimum recommended standard increased from 13 percent in 1982 to 47 percent in 1992, a 34 point change.

- Change occurred in all groups; however, some disparities across racial and ethnic groups persisted. While there were no differences between blacks and whites or Asians and whites, a smaller proportion of Hispanics than whites (36 percent compared to 48 percent) completed the recommended courses in 1992.

- A gap between graduates of urban and rural schools emerged in 1992. In 1982, approximately the same percentage of graduates of urban, suburban, and rural schools met the minimum recommended standard. Ten years later, 51 percent of the graduates from urban schools completed the recommended coursework compared to only 42 percent of graduates from rural schools.

- In 1982, 10 percent of high school graduates whose parents had not finished high school completed the recommended courses compared to 20 percent of graduates whose parents had completed college. In 1992, the groups were approximately equal.

- The percentage of graduates who took both advanced algebra and geometry increased from 29 percent in 1982 to 50 percent in 1992.

- The proportion of high school graduates who completed calculus approximately doubled from 4 percent in 1982 to 10 percent in 1992.

- Over half, 54 percent, of 1992 graduates completed both biology and chemistry, compared to only 29 percent of 1982 graduates.

Tested Achievement

- Differences in **reading** achievement between seniors from white and minority groups decreased between 1972 and 1992.

- In 1972, a gap existed between seniors attending urban high schools and those attending suburban high schools. In 1992, this gap had narrowed.

- In **mathematics** achievement, the gap between males and females had decreased. There was essentially no difference between male and female seniors in tested mathematics proficiency.

- Differences in mathematics achievement across racial and ethnic groups also decreased, although disparities still existed.

- In contrast to the lessening of racial and ethnic achievement differences, social class differences became more marked. Compared to 1972, the group of top-achieving seniors in 1992 included a smaller proportion of seniors from the lowest socio-economic status quartile.

High School Seniors' Plans for Next Year

- The proportion of seniors planning to work immediately after high school graduation has fallen from 32 percent in 1972 to 14 percent in 1992.

- In 1992, 78 percent of seniors reported that they would continue on to a postsecondary institution immediately after high school graduation compared to 59 percent in 1972.

Types of Institutions College-Bound Seniors Plan to Attend

The percentage of high school seniors who planned to attend four-year colleges or academic programs at two year colleges immediately after high school increased between 1972 and 1992. The proportion of seniors planning to enroll in vocational programs at two year colleges remained constant, while the percentage of seniors planning to attend trade or technical schools declined.

- In 1972, about one-third (34 percent) of all seniors planned to attend a four-year college in the year following high school graduation, while in 1992, over half of all seniors planned to attend a four-year college.

- The percentage of seniors planning to enroll in an academic program in a two-year college increased slightly from 11 percent in 1972 to 13 percent in 1992.

- Approximately the same proportion of seniors in 1972 (5 percent) and 1992 (6 percent) planned to enroll in a vocational program at a two-year college.

- About 9 percent of 1972 seniors planned to enroll in a trade or technical school after high school. By 1992, only half that percentage (4 percent) planned to continue their education at a trade or technical school.

- In 1972, a slightly higher percentage of males (35 percent) than females (32 percent) planned to go on to a four-year college immediately after high school. By 1992, this was reversed--significantly more females (58 percent) than males (50 percent) planned to attend a four-year college in the year after high school graduation.

- Among those planning to attend college next year, four-year institutions were chosen by approximately equal proportions of 1992 black and white seniors. However, Hispanic seniors were less likely and Asian seniors were more likely than white seniors to plan to attend a four-year college.

Highest Degree Expected

- In 1972, 19 percent of seniors expected to end their schooling with high school. By 1992, only 5 percent of seniors reported that they would not continue their education past high school.

- The proportion of seniors who expected to pursue some further education, but did not think they would finish college, also declined from 31 percent in 1972 to 25 percent in 1992.

- While the proportion of seniors who expected to end their education with their bachelor's degree remained fairly constant (38 percent in 1972 and 36 percent in 1992, the proportion of seniors expecting to complete college and continue on to graduate school increased substantially. In 1972, 13 percent of seniors thought they would go on to earn a graduate degree; in 1992, one-third of all seniors expected to earn some type of graduate degree.

- In 1972, 16 percent of males expected to pursue graduate education compared to 9 percent of females. In 1992, females were more likely than males to expect to earn a graduate degree, 35 percent compared to 31 percent.

Heightened expectations are apparent among all racial and ethnic groups.

- Thirty-eight percent of black seniors in 1992 expected to obtain a graduate degree compared to only 14 percent in 1972.

- Among whites, the proportion expecting to pursue a graduate degree increased from 13 percent in 1972 to 32 percent in 1992.

- Aspirations also increased among Asian seniors; in 1992, 42 percent expected to attain a graduate degree, compared to 16 percent in 1972.

- In 1992, 31 percent of Hispanic seniors expected to earn a graduate degree, compared to 9 percent 20 years earlier.

Values

The values emphasized by high school seniors have changed since 1972. The 1992 cohort of seniors more frequently emphasized work and money than did their peers of the preceding generation.

- Compared to 1972, more seniors in 1992 stated that "success in work," "having lots of money," "being able to find steady work," "giving children a better opportunity," and "living close to parents" were very important.

- The importance of "having friends" remained unchanged, while the importance of "having a good marriage" and "working to correct social and economic inequalities" declined.

Foreword

This report presents data from three longitudinal studies conducted by the National Center for Education Statistics. The National Longitudinal Study of the Class of 1972 (NLS-72), High School and Beyond (HS&B) and the National Education Longitudinal Study of 1988 (NELS:88) were all designed to assess the educational experiences and achievement of high school students. With each cohort, the scope of the study was enlarged: NLS-72 focused on high school seniors; HS&B examined the experiences of sophomores as well as seniors, and gathered data from school records, administrators, teachers and parents; while NELS:88 began with a group of eighth-grade students, and followed these students as they continued through high school or dropped out of high school. As in HS&B, information was gathered from high school teachers, administrators, school transcripts, and parents.

These three studies provide a particularly rich resource for examining the changes that have occurred in American education during the past twenty years. We can use these data to examine how student academic coursework, achievement, values, and aspirations have changed, or remained constant, throughout this period. This report examines trends in each of these areas and explores how various subgroups of the population have experienced these changes.

It is evident from this report that progress has been made in improving the quality of the educational experience for many students. In 1992, the proportion of seniors completing rigorous sequences of academic courses was higher than in either of the prior years examined. And the proportion of students who expected to complete college and attend graduate school was at an all time high. As a society, we should take pride in this accomplishment. At the same time, this report also highlights areas in which improvement is still needed.

Paul Planchon, Associate Commissioner
Elementary/Secondary Education Statistics Division

Jeffrey Owings, Branch Chief
Longitudinal and Household Studies Branch

Acknowledgements

The authors would like to thank the reviewers at NCES for their comments and suggestions at all stages in the production of this report: Jeffrey Owings, Chief of the Longitudinal and Household Studies Branch, Peggy Quinn, Project Officer for the Second follow-up, Ralph Lee, and Marilyn M. McMillen.

We are also grateful for the comments offered by external reviewers: Bob Burton, Timothy J. Madigan, Paula R. Knepper, Arnie Goldstein, and Duncan MacQuarrie.

Colleagues at NORC also provided thoughtful comments and assistance. Tom Hoffer read a draft of this manuscript and offered useful suggestions for its improvement. Karen Sutherlin, Vivian Tillman, Whitney Moore, and Jeffrey Cothran provided secretarial assistance. Virginia Bartot and Gloria Rauens helped us to create the necessary data files from these complex studies.

Finally, we would like to thank the NELS:88 Second Follow-up project staff including Steven Ingels, Project Director, and Leslie Scott and Lisa Thalji, Associate Project Directors. These people marshalled the resources necessary for us to complete this task. Donald Rock and Judy Pollack of Educational Testing Service were responsible for the design and scaling of the achievement tests used in NELS. Our thanks to all.

Table of Contents

Page

Highlights iii

Foreword vii

Acknowledgements viii

Prologue 1

- The Historical Context 1
- Labor Market Trends 2
- Social and Demographic Trends 3

Chapter 1. A Profile of Seniors in 1972, 1980, and 1992 6

- Demographic Shifts 6
- Race and Social Class 8
- Values 10

Chapter 2. High School Program, Tested Achievement, and Course-Taking 15

- High School Program 15
- Trends in Course-taking from 1982 to 1992 20
- Tested Achievement in Mathematics and Reading 25
- Participation in Extracurricular Activities 30

Chapter 3. Seniors' Plans for Next Year 33

- Plans to Work Full-time in the Year Following Graduation 35
- Type of Postsecondary Institution Seniors Plan to Attend in the Year Following Graduation 37
- College Selection 41
- Expected Major Field of Study 46

Chapter 4. Seniors' Plans for the Future 48

- Educational Expectations 48
- Occupational Expectations 52

Chapter 5. Conclusion 58

List of Appendices

Page

Appendix A. Supplementary Tables 59
Appendix B. Standard Errors for Percent Estimates Reported in Text 71
Appendix C. Description of Surveys and Cross-Cohort Comparisons 111
Appendix D. Methodology Used in Report 133
Appendix E. Publications Using NELS:88 Data 144

List of Tables

Table 1.1 Number (in thousands) of Households with Children Under 18 by Householder Status 3
Table 1.2 Items Most Frequently Cited by the General Public as a Major Problem Facing the Local Public Schools: 1970-1992 (Percents) 5
Table 1.3 Percent of Seniors by Sex, Race, and Region 6
Table 1.4 Percent of Black, White, Asian, and Hispanic Seniors in Each Quartile of Social Class 9
Table 1.5a Percent of Seniors Who Believe that Various Values are "Very Important" 13
Table 1.5b Percent of Seniors Who Believe that Various Values are "Very Important" 14
Table 2.1 Percent of Seniors Reporting Enrollment in General, Academic, and Vocational High School Programs 19
Table 2.2 Percentage of High School Graduates Earning the Recommended Units in Core Courses: 1982 and 1992 21
Table 2.3 Effect Sizes of Changes in Reading Scores for Various Subgroups in 1972, 1980, and 1992 26
Table 2.4 Effect Sizes of Changes in Mathematics Scores for Various Subgroups in 1972, 1980, and 1992 28
Table 2.5 Percent of Seniors in Highest and Lowest 15 Percent in Reading and Mathematics 29
Table 2.6a Percent of Seniors Reporting Participation in Extracurricular Activities 31
Table 2.6b Percent of Seniors Reporting Participation in Extracurricular Activities 32
Table 3.1 Percent of Seniors Planning to Work Full-Time in Year Following High School Graduation 36
Table 3.2 Percent of All Seniors Who Plan to Continue Education Next Year at Four-Year Colleges, Two-Year Academic Programs, Two-Year Vocational Programs, or Trade and Technical Schools 40
Table 3.3a Percent of College-Bound Seniors Who Reported Various Financial Factors Were "Very Important" in Selecting a College 44
Table 3.3b Percent of College-Bound Seniors Who Reported Various Academic Factors Were "Very Important" in Selecting a College 45
Table 3.4 Percent of College-Bound Seniors Expecting to Major in Each Field 47
Table 4.1 Percent of Seniors Expecting to Complete Various Levels of Education 51
Table 4.2 Percent of Seniors Who Expect to be in Various Occupations 53
Table 4.3 Percent of Seniors Who Expect to be in Various Occupations by Sex and Race 54

List of Figures

Page

Figure 1.1 Percent of High School Seniors from Racial and Ethnic Groups, 1972-1992 7
Figure 1.2 Percent of High School Seniors Who Report Various Values to be "Very Important" 11
Figure 2.1 Percent of High School Seniors in Various High School Programs 17
Figure 2.2 Percent of High School Seniors Completing Mathematics Courses 23
Figure 2.3 Percent of High School Seniors Completing Science Courses 24
Figure 3.1 Seniors' Plans for Year Following High School Graduation 34
Figure 3.2 Percent of Seniors Attending Various Types of Postsecondary Institutions 38
Figure 3.3 Considerations College-Bound Seniors Report to be "Very Important" in Selecting a College 42
Figure 4.1 Percent of Seniors Expecting to Attain Various Levels of Education 49

Prologue

This report presents information about three groups of students, high school seniors in 1972, 1980, and 1992. In the spring of each of those years, the National Center for Education Statistics conducted a survey asking seniors about their experiences in school as well as their plans for the future. In 1972, the National Longitudinal Study (NLS-72) was launched, followed by High School and Beyond (HS&B) in 1980, and the National Education Longitudinal Study of 1988 (NELS:88), Second Follow-up in 1992. A detailed description of these studies can be found in Appendix C; methodology used in analyzing these data is described in Appendix D. Before proceeding with a discussion of findings, it is important to place these studies in context. To do this, we begin by presenting a brief overview of the historical context which framed the experience of each cohort, the labor market and demographic trends that characterized the 20 year period being examined, and the changes in the educational environment that influenced the academic experiences of each group of seniors.

The Historical Context

Some perspective on the experiences of each group of seniors can be provided by briefly reviewing the headlines that made news during each cohort's senior year, as well as television programs that portrayed a slice of contemporary American life. These vignettes provide snapshots of each era, helping to establish a context for the research findings that follow.

During the 1971-1972 school year, the American bombing of Vietnam continued as the Paris peace talks stalled, President Nixon visited China, and wage and price controls were lifted as the economy improved.[1] The presidential campaign was in full swing, with McGovern and others courting the votes of the newly enfranchised 18-year olds. The history-making break-in at Watergate would not occur until June of 1972 and, according to a Gallup poll, Nixon was the most admired man in America. On television, the popularity of "Gunsmoke" was waning while the top-rated "All in the Family" was propelling the medium into more controversial territory.[2] On "Mary Tyler Moore," Mary Richards was breaking new ground as a single female employed as associate producer of a local newscast, whose relationships revolved around work and friends rather than home and family.

The Class of 1980 came of age during different times. When Americans were asked in the spring of 1980 about the country's most important problems, foreign policy and international problems topped the list, followed by concern about the economy.[3] Iran had moved to the center of the world stage by taking over the U.S. embassy in Teheran, and holding American hostages. The Soviet invasion of Afghanistan stirred a new round of anti-communist sentiment. At home, Americans' sense of well-being was threatened by double-digit inflation as the prime interest rate hit 20 percent in April of 1980. In May, race riots erupted in Miami, killing 18 and injuring 350. Running on a conservative platform and promising to make America strong again, Ronald Reagan was the leading candidate in the race for the

---

[1] These and other events are chronicled in the "Headline History" section of Gallup, George. (1978). *The Gallup Poll -- Public Opinion 1972-1977*. Wilmington, Delaware: Scholarly Resources Inc.

[2] See the average ratings for television shows as published in Brooks, Tim and Marsh, Earle. (1981). *The Complete Directory to Prime Time Network TV Shows 1946-Present*. New York: Ballantine Books.

[3] These and other events are chronicled in the "Headline History" section of Gallup, George. (1981). *The Gallup Poll -- Public Opinion 1980*. Wilmington, Delaware: Scholarly Resources Inc.

Republican nomination for President. "Three's Company" was the top-rated sitcom on television, but the most talked about show was the season finale of "Dallas" that left viewers asking "Who shot J.R?"

Seniors graduating in the spring of 1992 faced a somewhat different world. The Soviet Union had fallen apart, and the U.S. military was engaged in airlifting supplies to the former soviet block countries to assist them through the winter.[4] The countries of Slovenia and Croatia were formally recognized, marking the breakup of Yugoslavia. In Los Angeles, race riots were sparked by the verdict in a highly publicized case in which police officers were videotaped as they beat a black man, Rodney King, as he was being arrested. In a Gallup poll conducted in the spring of 1992, respondents reported that the country's most important problems were the economy, unemployment, poverty and homelessness, followed by health care. In the fictional world of television situation comedies, the woman in the newsroom was now the high-powered network anchor, "Murphy Brown," whose decision to have a child outside of marriage provided grist for speeches by former Vice President, Dan Quayle.

Labor Market Trends

Some common threads were apparent throughout the period. Concern over the economy and unemployment resulted, in part, from shifts in the labor market--stagnation in the manufacturing sector accompanied by growth in the service sector. Since 1972, the number of manufacturing jobs remained relatively constant, even though the number of employed persons increased substantially:[5]

- In the goods-producing industries (mining, construction, and manufacturing), 23.6 million people were employed in 1970, 25.7 million in 1980, and 23.5 million in 1992.

- Employment in service-producing industries (transportation, utilities, wholesale and retail trade, finance, insurance, real estate, services, and government) increased dramatically. In 1992, 84.8 million people were employed in service industries, compared to 47.3 million people in 1970.

As proportions of the labor force, though, these figures meant that one-third of all employed adults worked in goods-producing industries in 1970; by 1992, only 22 percent worked in that sector. Concern about job security was not limited to those in manufacturing; it also affected workers in both white and blue-collar positions across sectors as companies tried to "downsize" to remain competitive.

A notable trend during this period has been the growth of female participation in the labor force. In 1970, 43 percent of women 16 and over were employed; in 1991, over 57 percent of women were employed.[6] Women now constitute 45 percent of the labor force. During this time, women have pushed for increased equality in the workplace with some success. According to U.S. Census data, in 1970, a typical woman earned 59 cents for every dollar earned by a typical man.[7] In 1980, little had changed--

---

[4] These and other events are chronicled in the "Headline History" section of Gallup, George. (1993). *The Gallup Poll -- Public Opinion 1992*. Wilmington, Delaware: Scholarly Resources Inc.

[5] Department of Labor, Bureau of Labor Statistics as reported in *1993 Information Please Almanac*, p 61.

[6] ibid., p 56

[7] Ibid, p 59.

women's earnings were only 60 percent of men's earnings. By 1990, women's earnings relative to men's increased to 72 percent.

Social and Demographic Trends

Racial inequality.[8] Inequalities between racial groups have also been the focus of social policies instituted during this period, however, disparities persist. In 1975, the median income of white families was $34,662, black families $21,327, and Hispanic families $23,203 (in constant dollars). In 1990, white incomes had increased to $36,915, while black and Hispanic family incomes remained stable at $21,423, and $23,431, respectively (in constant dollars).[9] The proportion of extremely poor black families doubled during this time. In 1975, 6 percent of black families had incomes of under $5,000, compared to 12 percent in 1990.

There has been tremendous change in the attitudes of white Americans toward civil rights. However, while progress in civil rights has been made, tension over race and the means to ensure equal opportunity has been constant throughout this 20 year period. In 1971-72, tension surrounded the Supreme Court decision upholding busing as a means of desegregating schools. The Miami riots of 1980 focused new attention on race relations in America's urban centers and the strained relationships between racial and ethnic groups in the inner city. And finally, the 1992 riots in Los Angeles bear witness to the fact that racial tensions persist to the present.

Family structure. Changes in family structure have also been evident throughout this time period. As shown in Table 1.1, the number of households composed of a married couple with children under the age of 18 declined slightly between 1970 and 1991.[10] At the same time, the number of single-parent households increased dramatically. In 1970, there were 2.9 million female-headed households with children under 18. In 1991, that number had more than doubled; there were over 6.8 million female-headed households with children under 18 in 1991.

Table 1.1
Number (in thousands) of Households with Children Under 18 by Householder Status

	1970	1980	1991
Married couple with own children under 18	25532	24961	24397
Male householder, no spouse present, with children under 18	341	616	1181
Female householder, no spouse present, with children under 18	2858	5445	6823

Source: U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, Series P-20, Nos. 411, 419, 424, 432, 447, and unpublished data.

---

[8] The reader may note that here and throughout the report, relatively few comparisons involving Asian seniors are discussed. This is due to two factors. First, the sample size for Asians in 1972 is quite small and second, even though the sample sizes are somewhat larger in the subsequent years, the variability in this group was quite large, leading to standard error estimates considerably larger than the other groups, with the result that few of the comparisons involving this subgroup were statistically significant.

[9] ibid, p 46.

[10] See page 26 (Table 18) of U.S. Department of Education, National Center for Education Statistics, (1993). *Digest of Education Statistics, 1993.* Washington: NCES 93-292.

Demographic changes. One of the biggest changes directly affecting education between 1972 and 1992 was the declining numbers of children under 18 in the population. Members of the Class of 1972 and the Class of 1980 were part of the "baby boom" generation while members of the Class of 1992 were part of the "baby bust" generation. In fact, the 1980 seniors were part of one of the largest birth cohorts in U.S. history.[11] In 1980, there were approximately 8.7 million 18-19 year olds, compared to 7.9 million in 1972, and 6.8 million in 1992. The relative size of each cohort might be expected to have an impact on the class sizes and resources available to members of each group. The 1980 cohort was poised in a difficult position--the last, and one of the largest, of the baby-boom cohorts. It is likely that this generation of students taxed the capacity of schools throughout their journey through the system.

Martin and Midgley (1994) summarize important shifts in immigration to the United States during this time period. Whereas prior to 1965, most immigrants to the United states were from Europe, since 1965 the majority have come from Asia and Latin America. In fact, between 1981 and 1992, only 10 percent of U.S. immigrants came from Europe. This shift in immigration patterns is also being reflected in the demographic make-up of the U.S. foreign born population, which in 1990 was 23 percent Asian, while the native born population was only 1 percent Asian.[12] These trends should make assessments of Asian students more feasible in subsequent years. Unfortunately, the numbers available in the 1972 and 1980 samples are not sufficient for stable comparison.

The social trends documented above are only part of the historical circumstance that framed the experiences of each cohort of seniors. Changes in education and the public's view of education also affected each generation.

Perceptions of the education system. The public's perception of education changed throughout this period. Table 1.2 below presents information on American's perceptions of the problems facing local public schools. A few key trends are noteworthy. First, concern regarding the use of drugs steadily increased; this despite the fact that the prevalence of marijuana and cocaine use by high school seniors declined beginning in the late 1980s.

Lack of discipline was a major concern in all three years, however, in 1980 there was a large spike in the proportion of adults expressing concern about this problem. By the early 1970s, violence in schools was already becoming a problem severe enough in the cities to prompt the introduction of programs, equipment, and alarms to detect weapons being brought to school by students. (E.g., a study of the Los Angeles School system indicated that by 1974, nearly 14 percent of schools had installed sophisticated alarm systems and another national study found that by 1977, 17 percent of schools were using some type of electronic security system).[13]

Over one-quarter of adults in 1980 stated that lack of discipline was a major problem facing their local school. Other notable trends over the 20 year period include increased concern about financial support, and the decreasing concern over obtaining good teachers, and school integration and busing. Concern over curriculum and standards was highest in 1980.

---

[11] These figures are taken from Table 15 (page 23) of U.S. Department of Education, National Center for Education Statistics, 1993. *Digest of Education Statistics 1993*. Washington: NCES 93-292.

[12] Martin, P., & Midgley, E. (1994). *Immigration to the United States: Journey to an uncertain destination*. Population Bulletin, 49(2), 2-46.

[13] McDill, E.L. & McPartland (1977). *Violence in Schools*. Lexington, MA: Lexington Books.

Table 1.2
Items Most Frequently Cited by the General Public as a Major Problem Facing the Local Public Schools: 1970-1992 (Percents)

	1972	1980	1992
Use of drugs	11	14	22
Lack of discipline	18	26	17
Lack of financial support	17	10	22
Getting good teachers	12	6	5
Poor curriculum/standards	6	11	9
Large schools/overcrowding	--	7	9
Moral standards	--	--	4
Parents lack of interest	3	6	5
Pupils lack of interest/truancy	--	5	3
Drinking/alcoholism	--	2	2
Low teacher pay	--	--	3
Integration/busing	17	10	4
Teachers' lack of interest	--	6	2
Lack of proper facilities	11	2	--

-- Sample size insufficient for reliable estimates.

Source: "The Annual Gallup Poll of the Public's Attitudes Toward the Public Schools", Phi Delta Kappan, various years. As reported in the Digest of Education Statistics, 1993, Table 23, page 30.

Curricular change. Perhaps the most important trend during this period was the initiation of the "school reform" movement in the 1980s. Reflecting the concern of all Americans, the National Commission on Excellence in Education issued *A Nation at Risk* in 1983. The Commission called for a more rigorous high school curriculum, including increased work in mathematics and science for all students. Since that time, 42 of the 50 states have raised high school graduation requirements.[14]

---

[14] Coley, R. and Goertz, M.E. 1990. *Educational Standards in the Fifty States: 1990.* Princeton, N.J.: Educational Testing Service.

Chapter 1. A Profile of Seniors in 1972, 1980, and 1992

The demographic trends, environmental factors, and changes in societal values outlined above can also be seen in a number of the trends observed among high school seniors during this time frame. This chapter examines changes in demographics, socio-economic status, and values among high school seniors in 1972, 1980, and 1992.

Demographic Shifts

Marked shifts occurred in the distribution of the U.S. population between 1972 and 1992. During this time, population shifted away from the "rustbelt" of the north and midwest toward the "sunbelt" of the south and west. This regional shift is reflected in the distribution of high school seniors in 1972, 1980, and 1992 displayed in Table 1.3. The figures presented in this table, as well as all other figures presented in this report, are based on survey data that have been weighted to represent the total population of high school seniors.

The increasing diversity of the U.S. population is also reflected in Figure 1.1.[15] The percentage of minority high school seniors has increased substantially. In 1972, 86 percent of high school seniors were white; in 1992, only about 73 percent were white. The proportion of black, Asian, and Hispanic seniors all grew over the same time span, in part due to immigration and in part due to differential birth rates.

Table 1.3
Percent of Seniors by Sex, Race, and Region[16]

	1972	1980	1992
SEX			
Male	49.9	48.1	50.4
Female	50.1	51.9	49.6
RACE/ETHNICITY			
Black	8.7	11.6	11.9
White	85.8	79.9	72.7
Asian	0.9	1.3	4.5
Hispanic	3.5	6.3	10.0
REGION			
Northeast	26.4	22.9	19.8
Midwest	30.2	28.6	26.0
South	26.2	30.4	34.7
West	17.2	18.1	19.5

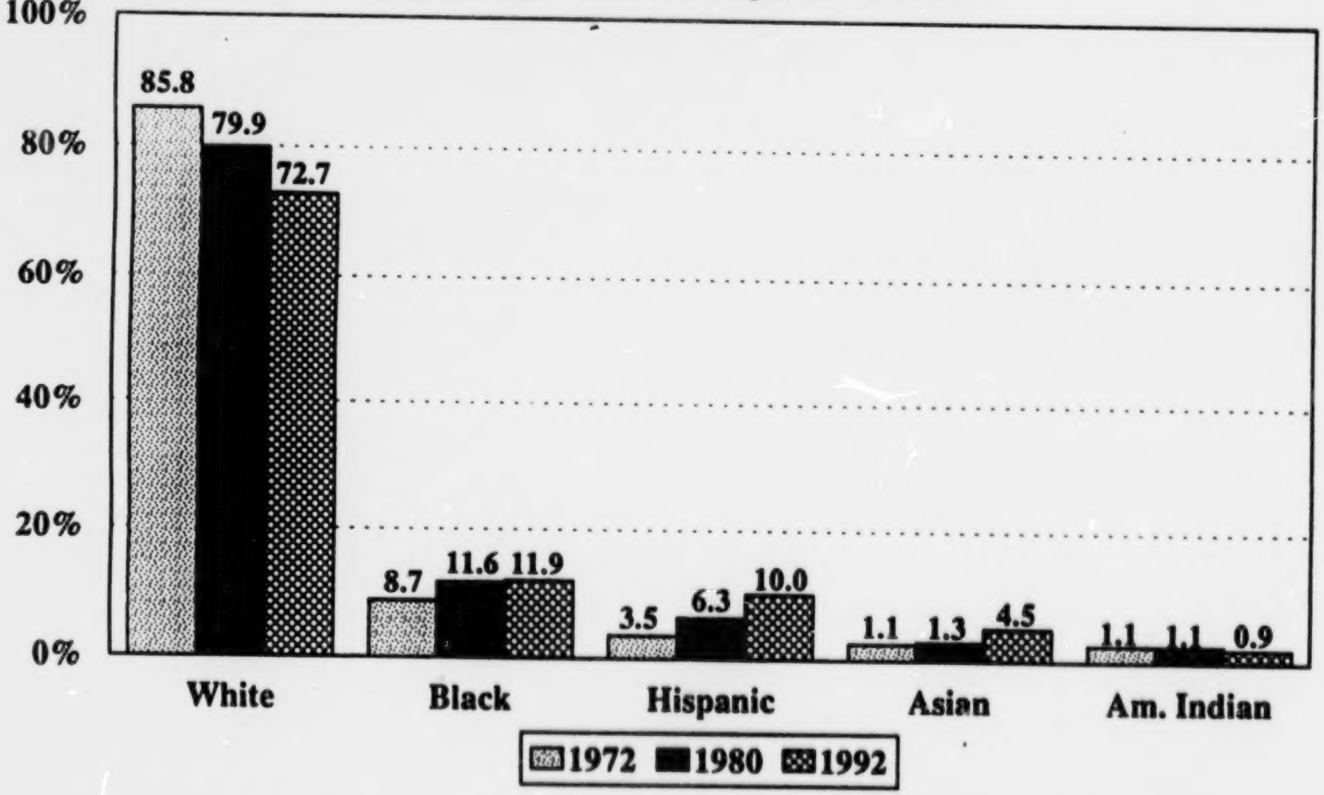
Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

---

[15] Note that Figure 1.1 includes Native Americans as a proportion of the samples reported. However, because the sample size for this group was too small for statistically reliable estimates, it was eliminated from the remainder of the calculations in this report.

[16] The categories indicating missing data/no data available were eliminated in the computation of the percentages in this table. All estimates are subject to sampling error. Standard errors for the tables in this report can be found in Appendix B.

Figure 1.1
Percent of High School Seniors from Racial and Ethnic Groups, 1972-1992



Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Race and Social Class

Perhaps one of the most important changes that occurred between 1972 and 1992 is the increased prosperity of at least a segment of the minority population. Table 1.4 presents data on the proportion of black, white, Asian and Hispanic High School Seniors who are in the highest quartile of socioeconomic status (SES), the middle quartiles, and the lowest quartile. Naturally, as the largest group, the percentage of whites in each quartile group remains relatively constant. However, the distribution of other social classes within other racial and ethnic groups has changed significantly.

- The proportion of black seniors in the lowest SES group has decreased from 63 percent in 1972 to 42 percent in 1992. The percentage of black seniors in the highest SES group has doubled from 5 percent in 1972 to 10 percent in 1992. Despite these gains however, blacks are still far more likely than whites to be in the lowest SES group, and far less likely than whites to be in the highest SES group.

- The percentage of Hispanic seniors from low SES families has decreased from 61 percent in 1972 to 49 percent in 1992, while the percentage from high SES families has more than doubled from 7 percent in 1972 to 15 percent in 1992.

Table 1.4
Percent of Black, White, Asian, and Hispanic Seniors in Each Quartile of Social Class

	1972	1980	1992
BLACKS	100.0	100.0	100.0
Low SES Quartile	62.8	55.8	42.2
Middle Two SES Quartiles	31.9	35.8	47.3
High SES Quartile	5.2	8.5	10.5
WHITES	100.0	100.0	100.0
Low SES Quartile	18.5	21.4	18.3
Middle Two SES Quartiles	54.1	50.8	51.9
High SES Quartile	27.4	27.8	29.8
ASIANS	100.0	100.0	100.0
Low SES Quartile	25.4	21.2	23.3
Middle Two SES Quartiles	51.5	46.4	43.3
High SES Quartiles	23.1	32.4	33.4
HISPANICS	100.0	100.0	100.0
Low SES Quartiles	61.2	51.9	49.4
Middle Two SES Quartiles	31.6	37.8	35.6
High SES Quartiles	7.2	10.3	15.0

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Values

Values are basic beliefs people hold about what is important in their lives. Although relatively constant, values can and do change over time, reflecting the cultural values of the period. Figure 1.2 presents information on the values considered to be important by each cohort of seniors.

The values emphasized by high school seniors have changed since 1972. The 1992 cohort of seniors more frequently emphasized work and money than did their peers of the preceding generation. Compared to 1972, more seniors in 1992 stated that "success in work," "having lots of money," "being able to find steady work," "giving children a better opportunity," and "living close to parents" were very important. The importance of "having friends" remained unchanged, while the importance of "having a good marriage" and "working to correct social and economic inequalities" declined.

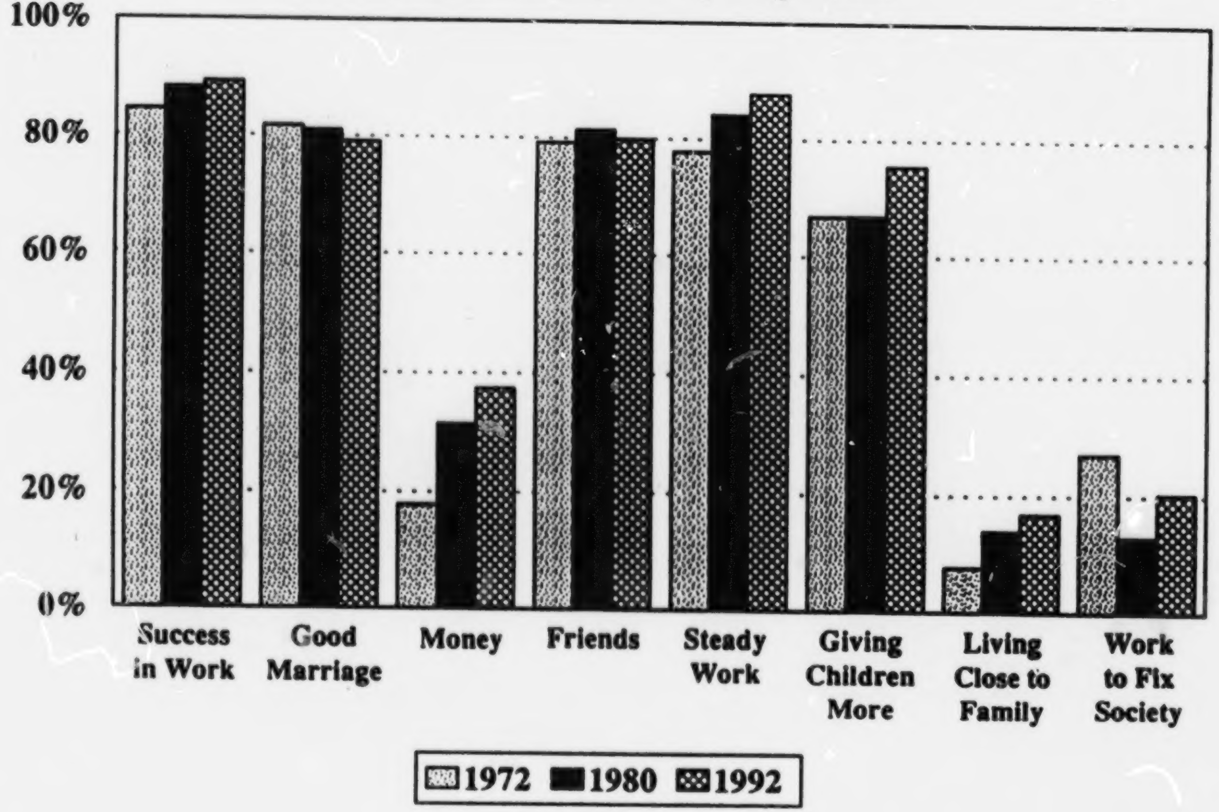
This shift toward a greater concern with work and money has not occurred evenly among all subgroups, as is evident in Tables 1.5a and 1.5b. Noticeable differences exist between men and women.

- In 1972, a lower percentage of women than men reported that the ability to find steady work was very important. By 1992, approximately equal percentages of women and men reported that the ability to find steady work was very important.
- Money has increased in importance for both men and women. Between 1972 and 1992, the percentage of males who believe that money is very important increased from 26 percent to 45 percent. During the same period, the percentage of women who believe money is very important increased from under 10 percent in 1972 to over 29 percent in 1992.

The trends among racial and ethnic subgroups are similar, with only two exceptions:

- The percentage of black and of white seniors who said that marriage was "very important" declined. Among blacks, the percentage decreased from 80 percent in 1972 to 74 percent in 1992, and among whites, the percentage decreased from 82 percent to 80 percent.
- In all years, a greater percentage of blacks than whites said that it was very important to work to correct social and economic inequalities (See table 1.5b). However, there was a decline in the proportion of blacks and whites who reported that working to correct social and economic inequalities was very important. The proportion of Hispanic and Asian seniors who believe that working to correct inequalities was very important remained constant.

Figure 1.2
Percent of High School Seniors Who Report Various Values to be "Very Important"



Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Despite the parallel trend, important differences in values between racial and ethnic groups persist.

- In 1992, black, Asian, and Hispanic seniors were more likely than white seniors to report that having a lot of money and giving children a better chance were very important.
- In addition, blacks in 1992 were more likely than whites to feel that success in work and having steady work were very important.
- Blacks and Hispanics were less likely than whites to say that friends were important.
- Compared to blacks and whites, Asians and Hispanics more typically believed living close to parents was very important.

Table 1.5a Percent of Seniors Who Believe that Various Values are "Very Important"

	A Good Marriage			Giving Children A Better Opportunity			Living Close to Parents			Friends		
	1972	1980	1992	1972	1980	1992	1972	1980	1992	1972	1980	1992
TOTAL	81.7	81.0	79.0	66.8	66.9	75.5	7.7	14.0	16.9	79.2	81.5	79.9
SEX												
Male	78.6	78.0	75.7	66.8	67.3	74.5	7.2	13.0	15.2	80.4	81.2	79.8
Female	84.9	83.8	82.3	66.9	66.5	76.5	8.3	14.8	18.7	78.0	81.8	80.0
RACE/ETHNICITY												
Black	80.4	76.3	74.1	88.7	85.6	91.2	10.0	14.2	16.5	60.3	60.3	63.5
White	82.1	81.8	79.8	63.7	63.2	71.0	7.1	13.0	15.2	81.8	85.0	83.4
Asian	69.5	81.0	79.4	69.6	75.0	79.1	13.8	24.4	26.6	78.7	84.8	82.5
Hispanic	83.5	80.7	78.8	84.1	79.2	86.7	14.1	21.8	25.4	69.2	72.2	72.4
REGION												
Northeast	80.4	78.4	80.3	63.8	65.1	74.2	7.8	13.9	18.3	80.3	82.7	83.3
Midwest	81.4	81.4	78.1	64.8	62.7	70.6	6.5	12.8	15.9	79.3	82.3	81.6
South	84.7	82.1	79.4	75.1	74.6	80.1	9.6	15.2	16.1	78.0	78.2	76.4
West	79.9	81.0	78.6	62.4	63.3	75.0	6.9	14.0	18.2	79.2	82.9	80.7
SOCIOECONOMIC STATUS												
Low	83.8	80.5	76.3	78.6	75.8	85.0	9.0	15.1	19.1	73.2	74.7	71.6
Middle	82.0	81.3	79.0	67.5	67.3	76.5	8.1	14.1	16.7	80.1	82.2	80.3
High	79.2	81.2	81.6	53.4	56.0	64.8	5.8	12.0	15.3	83.3	87.6	86.9
HIGH SCHOOL PROGRAM												
General	82.2	80.8	77.9	70.1	68.0	78.1	8.0	13.8	19.0	77.4	79.6	80.0
Academic	80.4	81.5	80.2	60.8	63.0	71.2	6.5	12.9	14.0	82.1	85.6	83.2
Vocational	83.8	79.9	77.5	74.4	71.4	82.0	10.0	15.8	20.3	76.0	76.9	73.0
COMPOSITE TEST QUARTILE - MATH AND READING												
Low	82.8	79.4	74.8	78.2	76.0	81.2	10.7	18.6	24.5	71.8	71.5	68.6
Middle	82.7	82.0	79.3	68.7	68.6	78.6	7.7	12.6	16.2	80.9	83.6	80.8
High	78.9	81.3	81.4	50.1	54.5	62.8	4.4	10.3	9.9	84.4	87.9	85.8

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table 1.5b Percent of Seniors Who Believe that Various Values are "Very Important"

	Steady Work			Success in Work			Money			Working to Correct Social Problems		
	1972	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**
TOTAL	77.8	84.3	87.9	84.5	88.4	89.3	17.8	31.4	37.4	26.9	13.0	20.3
SEX												
Male	82.1	85.8	87.1	86.2	89.1	89.0	25.9	40.5	45.3	22.4	12.3	17.0
Female	73.5	83.0	88.6	82.8	87.9	89.6	9.8	23.1	29.4	31.3	13.6	23.6
RACE/ETHNICITY												
Black	86.8	86.4	91.6	92.8	92.2	94.0	29.9	44.8	51.8	46.5	25.3	33.8
White	77.0	84.3	87.3	83.9	88.2	88.4	16.4	29.4	33.7	24.7	10.6	16.7
Asian	78.5	79.0	85.0	78.8	87.5	89.6	18.7	40.1	47.9	24.6	17.4	25.3
Hispanic	83.5	83.5	88.7	87.7	86.4	89.6	18.8	34.6	40.5	32.5	18.3	27.0
REGION												
Northeast	75.4	84.8	88.3	83.0	88.4	89.7	16.7	32.6	40.2	25.9	13.3	20.7
Midwest	77.6	84.9	87.9	83.9	88.4	88.3	17.3	29.8	36.0	24.9	10.7	17.1
South	81.6	84.5	88.0	88.1	89.0	90.4	19.6	32.5	38.1	31.8	15.2	21.6
West	76.0	82.1	87.2	82.5	87.2	88.4	17.9	32.0	34.9	24.4	12.7	21.7
SOCIOECONOMIC STATUS												
Low	83.4	84.1	88.3	85.4	86.2	89.5	19.2	31.5	43.6	28.9	15.0	29.4
Middle	78.4	85.0	88.6	84.8	89.0	89.1	17.3	31.1	37.6	25.4	11.7	45.4
High	71.0	83.5	86.1	83.1	89.9	89.4	17.6	32.0	31.2	27.8	13.3	19.5
HIGH SCHOOL PROGRAM												
General	78.9	84.0	88.0	82.3	86.5	88.4	18.9	32.6	38.3	24.8	11.8	20.0
Academic	74.3	83.9	87.9	85.3	90.6	90.6	16.2	28.8	34.3	29.8	14.6	21.1
Vocational	83.3	85.2	89.5	85.9	87.7	89.2	19.8	34.4	42.7	23.8	12.3	18.7
COMPOSITE TEST QUARTILE - MATH AND READING												
Low	84.2	83.7	85.7	86.4	85.5	87.1	24.9	41.0	49.2	26.8	15.9	20.5
Middle	79.6	86.1	90.0	85.5	89.9	90.4	16.4	29.7	38.5	26.2	11.7	18.2
High	67.2	81.7	84.6	80.3	88.8	87.7	12.8	24.3	25.4	28.7	11.9	18.6

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Chapter 2. High School Program, Tested Achievement, and Course-Taking

High School Program

In the United States and most modern societies, secondary schooling systems are expected to meet two at least partially competing objectives: providing a common education to all students, while at the same time preparing students for very different postsecondary educational and work experiences. While technological development has led to an increasingly specialized division of labor, many have argued that schools should not necessarily follow suit. Some see common educational experiences as an important way to build a shared civic identity among individuals working in fields that are often incomprehensible to outsiders. Other critics of specialization point to the rapid pace of technological and occupational change, arguing that a common general education is a better preparation for the future than a possibly soon-to-be-obsolete specialization. Still others stress the risk that earlier specialization will result in even stronger ties than now exist between family background advantages and access to the more advantageous specializations. Proponents of increased or earlier specialization argue that participation in a specialized program gives students not only marketable skills, but also an identity and a sense of belonging that will lead to greater engagement in school. The ways in which states, local educational authorities, and individual schools have tried to balance these objectives has changed over the years, and their efforts have often been subject to controversy.

Differentiation of programs occurs between as well as within high schools. The comprehensive high school has been the most popular form of school organization from the early part of this century until the present. It typically differentiates students into three main types of curriculum program: college preparatory or academic, vocational preparatory, and a hybrid of the two, most commonly known as the general studies program. The main alternative to the comprehensive form is the specialized high school, which may offer either a vocational or an academic program of studies. Historically, most specialized public schools were vocational high schools. In recent years, specialized academic "magnet schools" within urban districts have become widespread. Private and parochial high schools also usually specialize, normally in the college-preparatory function.

Cutting across the different types of schools are the main types of curriculum programs. Seniors in each of the three cohorts were asked to characterize their programs as general, academic, or vocational. The specific sequences of courses that constitute these programs of study vary from school to school, and even from student to student within the same school. After examining enrollment trends in the main programs, we turn to the types of courses seniors had completed during their high school careers. Detailed information on their sequences are available from the high school transcripts of the 1982 and 1992 cohorts.

Program placements and amounts of course work are associated with different levels of academic achievement,[17] and one would anticipate that trends in course taking will match up with trends in tested achievement. The three cohorts of seniors were tested in reading comprehension and mathematics, and, while the tests used different questions, we can still compare the sizes of group differences within cohorts.

During the 20 year period from 1972 to 1992, several noticeable shifts occurred in program placement, as demonstrated in Figure 2.1 Between 1972 and 1980, there was a decline in the participation in academic programs and an increase in the percentage of seniors in general education programs; the proportion enrolled in vocational education programs increased only slightly. During the following ten years, participation in academic programs returned to its previous level, while the percentage of seniors enrolled in vocational programs decreased.

---

[17] Adam Gamoran, 1987, "The stratification of high school learning opportunities." *Sociology of Education*, 60, 135-155.

- The percentage of seniors in vocational programs has declined significantly from 22 percent in 1972 (and 24 percent in 1980) to 12 percent in 1992.

- The proportion of seniors in general high school programs increased from 32 percent in 1972 to 40 percent in 1992.

- Enrollment in academic programs declined between 1972 and 1980, falling from 46 percent to 39 percent. However, by 1992, enrollment had returned to its 1972 level--48 percent of seniors were in academic programs.

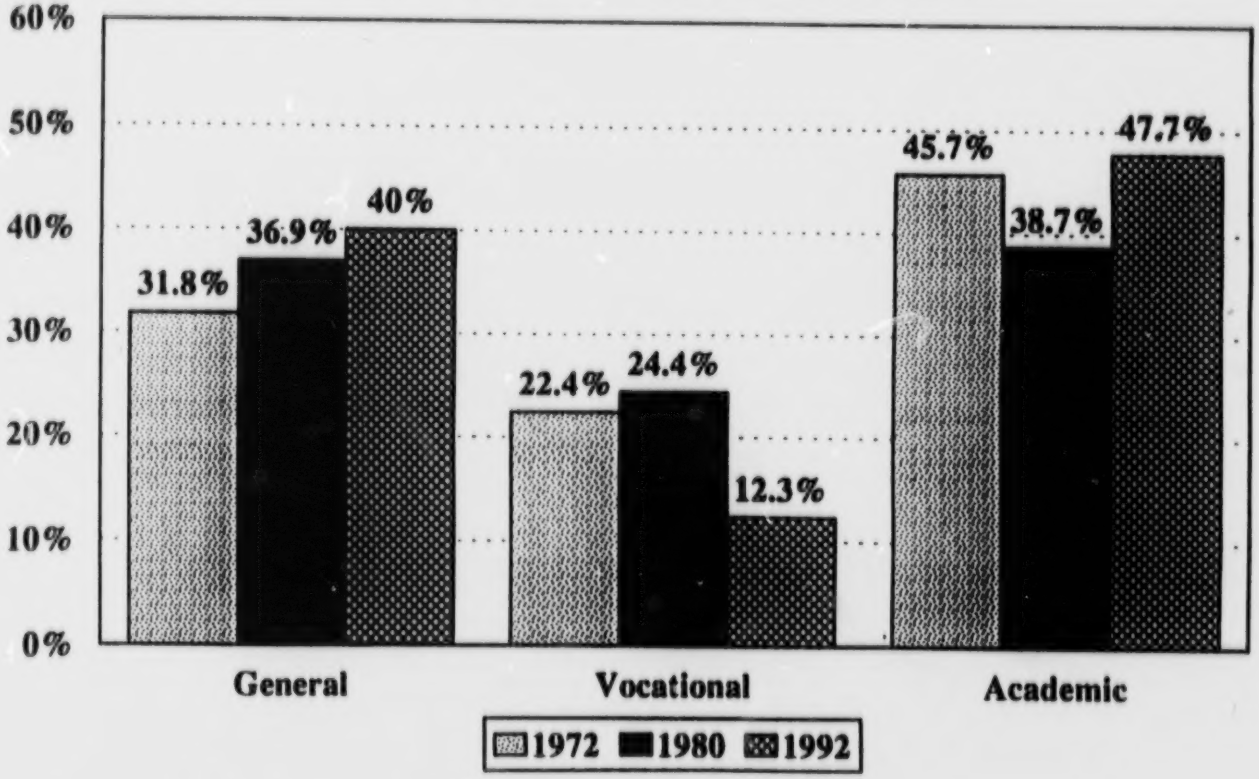
It is important to point out that, while the percentage of students enrolled in academic programs has increased, fewer than half of all seniors are in college preparatory courses. In 1992, the majority of seniors were not engaged in a program of coursework designed to prepare them for college.

The recovery in academic program enrollment is fueled primarily by the higher enrollment rates among females and minorities. Table 2.1 presents detailed information on high school program enrollment for subgroups of the population.

- While the percentage of males enrolled in academic programs declined from 48 percent in 1972 to 39 percent in 1980, by 1992 the percentage had returned to approximately the same level (47 percent). The percentage of females enrolled in academic programs has increased, from 43 percent in 1972 to 49 percent in 1992.

- There has been no increase in the percentage of white students enrolled in academic programs. However, the percentage of blacks increased from 33 percent in 1972 to 43 percent in 1992, and the percentage of Hispanics increased from 27 percent in 1972 to 35 percent in 1992. The percentage of Asians enrolled in college preparatory programs has remained relatively stable.

Figure 2.1
Percent of Seniors Reporting Enrollment in General, Academic, and Vocational High School Programs



Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

The decline in the proportion of seniors enrolled in vocational programs has occurred among all subgroups of the population. The sex inequity in vocational program placement that was apparent in 1972 has now disappeared.

- The proportion of males in these programs dropped from 19 percent in 1972 to 12 percent in 1992. For females, the change is even larger. In 1972 over one-quarter (26 percent) of women were enrolled in vocational programs; in 1992 that proportion had been cut in half to only 12 percent.

- In 1972, one-third of blacks and 30 percent of Hispanics were in vocational programs. In 1992, only 17 percent of blacks and 14 percent of Hispanics were enrolled in vocational programs.

Enrollment in general education programs was about equal for men and women in 1992. However, some disparity existed between racial and ethnic groups.

- Compared to whites, Hispanics in 1972 and 1992 were more frequently enrolled in general education programs. In 1972, 31 percent of white seniors and 42 percent of Hispanic seniors were in general education programs. This disparity was still evident in 1992 when 39 percent of whites and 51 percent of Hispanics were enrolled in general education programs.

Regional differences in program placement are becoming less pronounced. In 1972, 61 percent of seniors in the Northeast were in academic programs compared to 37 percent of seniors in the West, a 24 point difference. In 1992, only a 10 point difference between the two regions existed; 56 percent of seniors in the Northeast were in academic programs, compared to 44 percent in the West.

The tendency of seniors from high socioeconomic status families to be enrolled in college preparatory programs in significantly greater proportions than those for low socioeconomic backgrounds in 1972 and 1980 remained strong in 1992. Only 28 percent of seniors from families in the lowest SES quartile were in college preparatory programs compared to 63 percent of seniors from the highest SES quartile. As expected, a positive relationship between tested achievement and program placement was also evident in all three cohorts.

Table 2.1
Percent of Seniors Reporting Enrollment in General, Academic, and Vocational High School Programs

	General			Academic			Vocational		
	1972	1980	1992	1972	1980	1992	1972	1980	1992
TOTAL	31.8	36.9	40.0	45.7	38.7	47.7	22.4	24.4	12.3
SEX									
Male	33.1	38.0	40.9	48.3	39.0	46.6	18.6	23.0	12.5
Female	30.6	35.9	39.1	43.2	38.4	48.8	26.2	25.7	12.1
RACE/ETHNICITY									
Black	34.2	35.2	40.2	32.7	33.0	42.8	33.1	31.7	17.0
White	30.6	37.1	38.7	48.6	39.8	49.9	20.8	23.1	11.4
Asian	33.7	29.0	34.6	53.5	52.4	56.2	12.8	18.6	9.2
Hispanic	42.4	41.6	50.6	27.4	26.9	35.4	30.1	31.5	14.1
REGION									
Northeast	16.5	23.7	31.1	61.1	51.4	55.8	22.4	24.9	13.1
Midwest	35.2	40.4	39.5	42.2	35.3	46.0	22.6	24.4	14.5
South	35.3	39.4	41.1	39.9	32.8	46.2	24.8	27.8	12.7
West	44.1	45.4	47.6	37.2	34.5	44.5	18.6	20.1	8.0
SOCIOECONOMIC STATUS									
Low	39.6	43.4	49.1	25.2	21.1	28.3	35.2	35.5	22.6
Middle	32.1	38.4	39.0	45.0	36.3	48.8	22.8	25.3	12.2
High	23.3	27.5	33.6	68.1	62.0	63.0	8.6	10.5	3.4
COMPOSITE TEST QUARTILE - MATH AND READING									
Low	44.8	47.1	52.5	17.0	13.8	20.6	38.2	39.1	26.9
Middle	32.7	46.1	42.1	45.2	25.2	44.2	22.0	28.7	13.6
High	15.2	34.4	21.3	79.2	44.1	76.1	5.6	21.5	2.6

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Trends in Course-taking from 1982 to 1992

In the 1970s, many educators focused their attention on issues of equity and relevance of the curriculum. In the 1980s, the school reform movement promoted a return to basics, that emphasized increased course work in math and science, as well as taking a full sequence of English and history courses. Transcripts were not collected for NLS 1972 seniors or the 1980 High School and Beyond seniors. However, transcripts were collected for the 1982 High School and Beyond seniors and for the 1992 NELS:88 seniors. Table 2.2 and Figures 2.2 and 2.3 are taken from *The Condition of Education, 1994*, and are based on ***high school graduates*** in 1982 and 1992.

Core curriculum. In *A Nation at Risk*, the Commission on Excellence in Education recommended that all students complete at least four years of English, three years of social studies, three years of mathematics, and three years of science, as well as a half year of computer science. Table 2.2 presents information on the percentage of high school graduates who took the recommended sequence of courses in 1982 and 1992, though these data do not include the computer science requirements. These data indicate that there has been a marked increase in the percentage of students who have completed the recommended number of units in these core areas.

- The proportion of high school graduates who met the minimum recommended standard increased from 13 percent in 1982 to 47 percent in 1992, a 34 point change.

- Change occurred in all groups; however, some disparities across racial and ethnic groups persist. While there is no difference between blacks and whites or Asians and whites, a smaller proportion of Hispanics than whites (36 percent compared to 48 percent) completed the recommended courses in 1992.

- A gap between graduates of urban and rural schools emerged in 1992. In 1982, approximately the same percentage of graduates of urban, suburban, and rural schools met the minimum recommended standard. Ten years later, 51 percent of the graduates from urban schools completed the recommended coursework compared to only 42 percent of graduates from rural schools.

- In 1982, 10 percent of high school graduates whose parents had not finished high school completed the recommended courses compared to 20 percent of graduates whose parents had completed college. In 1992, the groups were nearly equal.

Table 2.2
Percentage of High School Graduates Earning the Recommended* Units in Core Courses: 1982 and 1992

	1982	1992
TOTAL	12.7	46.8
SEX		
Male	13.7	46.5
Female	11.8	47.2
RACE/ETHNICITY		
White	13.8	48.5
Black	10.8	43.7
Hispanic	6.7	36.0
Asian	19.8	50.7
URBANICITY		
Urban	12.9	50.8
Suburban	13.2	47.6
Rural	11.7	42.5
PARENT HIGHEST EDUCATION LEVEL		
Did not finish high school	10.0	45.3
High School graduate	10.7	47.2
Some college	14.8	45.7
College graduate	19.5	48.5

*The panel's recommendation of 0.5 units in computer science was not included in the table.

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Mathematics and science course-taking. Figure 2.2 presents information on the mathematics courses taken by students who graduated from high school in 1982 and 1992. Graduates from the Class of 1992 were more likely than graduates from the Class of 1982 to have taken advanced mathematics courses.

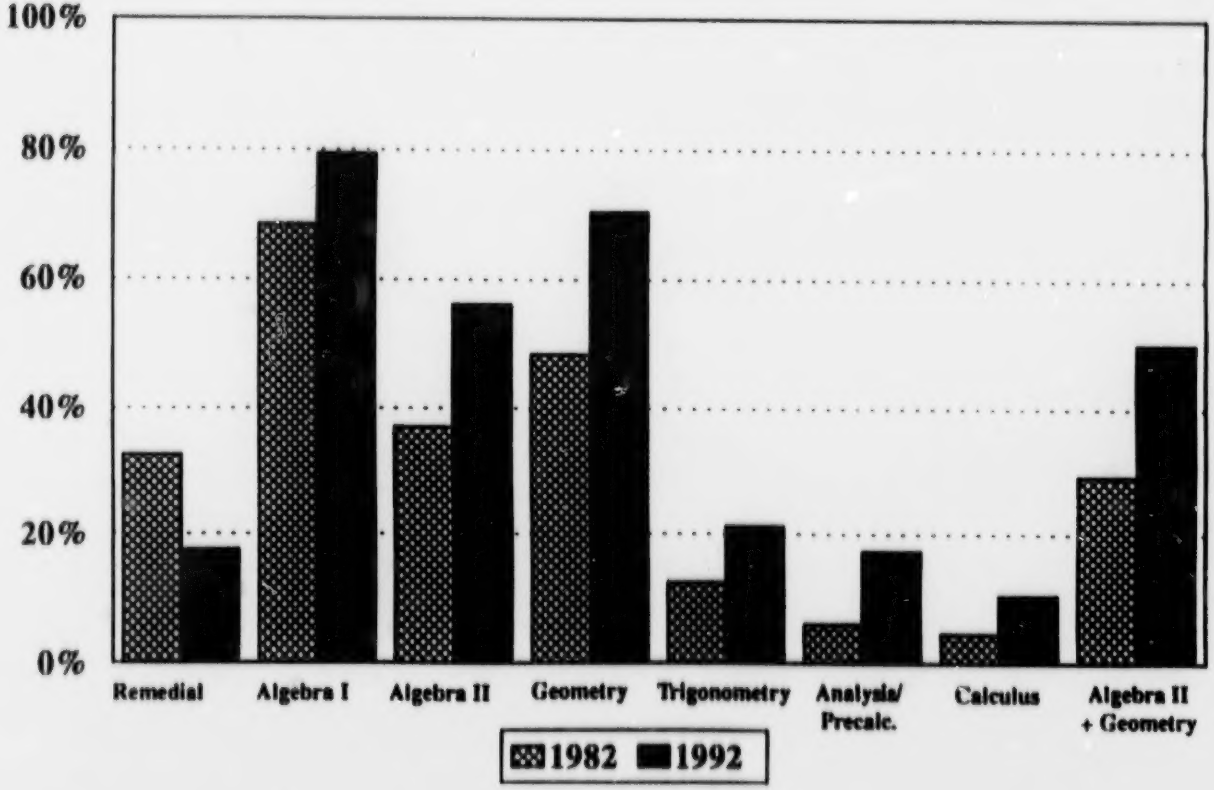
- The percentage of graduates who took both advanced algebra and geometry increased from 29 percent in 1982 to 50 percent in 1992.
- The proportion of high school graduates who completed calculus doubled from 4 percent in 1982 to 10 percent in 1992.
- Enrollment in remedial math courses declined during this period from 32 percent in 1982 to 17 percent in 1992.

Information on science courses completed by high school graduates is presented in Figure 2.3. Again, sharp differences between the two cohorts of high school graduates are evident.

- Over half, 54 percent, of 1992 graduates completed both biology and chemistry, compared to only 29 percent of 1982 graduates.
- In 1982, only 10 percent of high school graduates had completed biology, chemistry, and physics; by 1992, this proportion had doubled--22 percent of graduates that year had taken the three science courses.

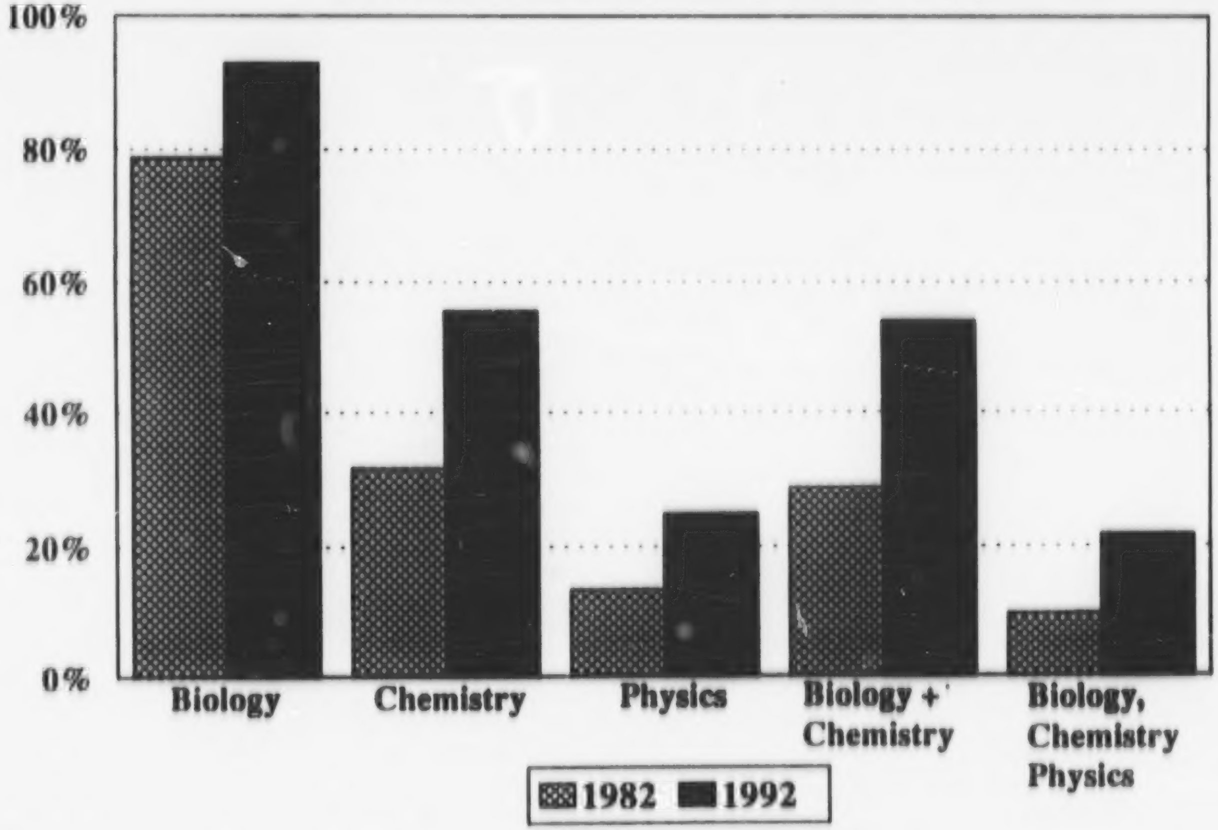
Tables presenting subgroup differences in mathematics and science course-taking are included in the Appendix.

Figure 2.2
Percent of High School Graduates Taking Selected Mathematics Courses in 1982 and 1992



Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Figure 2.3
Percent of High School Graduates Taking Selected Science Courses in 1982 and 1992



Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Tested Achievement in Mathematics and Reading

Differences in the content and scaling of the tests administered as part of the National Longitudinal Study, High School and Beyond, and the National Education Longitudinal Study limit our ability to measure change in tested achievement over time.[18] For example, it is not possible to quantify how much certain groups have gained or lost over time. However, it is possible to examine whether the gaps between subgroups that were evident in 1972 still existed in 1992. To answer this question, the "effect size," can be calculated, which measures the magnitude of the difference between groups.[19] For example, the difference in tested achievement between blacks and whites or between males and females can be expressed as an effect size. The effect size between groups in 1972 can then be compared to the effect size between those same groups in 1992. The significance of the change between 1972 and 1992 can then be tested.

Tables 2.3 and 2.4[20] present data on tested achievement in reading and mathematics among seniors in 1972, 1980, and 1992. Note that mean scores can be compared only *within* years, not across years. Cross-year comparisons must be based on effect sizes. Before discussing these tables, it is important to note that one of the major changes between the 1972 and 1992 tests was that the 1992 test measured a broader range of achievement; the ceiling of the test was raised substantially and the floor was lowered somewhat. Thus, if a gap between groups appeared in 1992 that was not observed in 1972, this might be an artifact of the change in the test itself, rather than achievement. However, if a gap between groups narrowed between 1972 and 1992, we can be reasonably confident that this reflects real change.

Readers may wish to compare 1972-92 seniors' results with data over the same period from the NAEP trend sample of 17-year olds.[21]

Reading. Differences in reading achievement between seniors from white and minority groups decreased between 1972 and 1992. The effect size of the difference between blacks and whites decreased from .97 in 1972 to .74 in 1992. The disparity in reading achievement between Hispanic seniors and

---

[18] See Appendix D for a more detailed description of differences in the achievement tests in the three studies.

[19] The effect size = $(M_1 - M_2)/SD_{pooled}$, where M_1 and M_2 are the means of the scores from the two groups being compared and SD_{pooled} is the pooled standard deviation. See Appendix D for additional information.

[20] The 1972 and 1980 portions of these tables were reproduced from Rock, D.A., Ekstrom, R.B., Goertz, M.E., Hilton, T.L., Pollack, J.M., & Fetters, W.B. (1985). *Factors Associated with Decline of Test Scores of High School Seniors, 1972 to 1980.* Washington, D.C.: Center for Statistics (CS85-217). This report breaks the Hispanic category into three subgroups. The 1992 data for these tables were analyzed using these subgroups for purposes of comparison to these previously published data.

[21] For NAEP trends in tested achievement from 1969-1992, see I. Mullis et al., 1994, *NAEP 1992 Trends in Academic Progress*, which summarizes findings for mathematics and reading, as well as science and writing. NAEP data show that reading achievement at age 17 was higher in 1992 than in 1971, and that mathematics achievement for this age group declined from 1973 levels through 1982, with performance returning to 1973 levels by 1992. The NAEP trend sample also shows that differences in average proficiency between seventeen year old white and black students narrowed between 1973 and 1992 in mathematics and between 1971 and 1992 in reading. By 1992, age 17 differences in average proficiency between white and Hispanic students also had narrowed both in mathematics and reading (see Mullis et al. 1994, Figure 3). Although the longitudinal data sets, particularly NELS:88, are rich sources of data on both family and school processes, this report is descriptive in its focus, and does not attempt to investigate the school or family factors that may account for changes in achievement over time. However, for a recent discussion of the relationship between changes in the family and changes in student achievement (and, implicitly, of school versus family effects on achievement trends) see D.W. Grissmer et al., 1994, *Student Achievement and the Changing American Family* (Santa Monica, CA: RAND). Grissmer et al. employ NAEP test data in conjunction with family context data from NLSY79 and NELS:88.

Table 2.3
Effect Sizes of Changes in Reading Scores for Various Subgroups in 1972, 1980, and 1992

	NLS 1972		HS&B 1980		NELS 1992	
	Mean	**Effect size**	**Mean**	**Effect size**	**Mean**	**Effect size**
TOTAL	9.89		8.84		33.18	
SEX						
Male	9.83		8.95		32.01	
Female	9.95	0.02	8.96	0.00	34.40	0.24
SOCIOECONOMIC QUARTILE						
Low SES	7.65		6.73		28.25	
Mid SES	9.92	0.47	9.05	0.48	33.26	0.52
High SES	12.13	0.94	11.20	0.94	38.13	1.07
RACE/ETHNICITY						
White	10.56		9.60		34.66	
Black	5.94	0.97	5.56	0.82	27.47	0.74
Asian	10.14	0.09	9.11	0.10	33.77	0.09
Mexican	6.28	0.89	5.60	0.80	28.68	0.61
Puerto Rican	6.11	0.93	5.68	0.78	30.23	0.45
Other Hispanic	6.68	0.81	5.73	0.78	30.43	0.43
TYPE OF SCHOOL						
Public	9.78		8.66		32.75	
Private	11.41	0.33	11.31	0.52	37.32	0.45
Catholic	11.61	0.37	10.06	0.28	37.01	0.43
REGION						
Northeast	10.55		9.57		34.65	
Midwest	9.97	0.12	9.21	0.07	33.79	0.09
South	9.14	0.28	7.83	0.34	31.79	0.28
West	9.88	0.13	9.01	0.11	33.38	0.13
HIGH SCHOOL PROGRAM						
General	8.48	0.77	7.71	0.76	30.94	0.70
Academic	11.99		11.33		37.38	
Vocational	7.51	1.00	6.81	0.96	27.80	1.07
LOCATION OF SCHOOL						
Urban	9.46		8.21		33.52	
Suburban	10.49	0.21	9.29	0.21	33.76	0.02
Rural	9.27	0.04	8.52	0.06	32.19	0.13

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

white seniors also decreased. The effect size among Mexicans decreased from .89 to .61; among Puerto Ricans it decreased from .93 to .45; among other Hispanics it declined from .81 to .43.

In 1972, a gap existed between seniors attending urban high schools and those attending suburban high schools. In 1992, this gap had narrowed. The effect size declined from .21 in 1972 to .02 in 1992, a significant decrease.

Because of the change in the test between 1972 and 1992, no conclusions can be drawn concerning some of the apparent increased gaps shown in Table 2.3. While there appears to be an increased gap in tested achievement between seniors from the highest and lowest SES quartiles, this may be a function of the increased ceiling of the 1992 test.

Mathematics. In mathematics achievement, the gap between males and females has decreased. In 1972, the effect size of the difference in mathematics achievement between males and females was .23. In 1992, the comparable effect size was .08. In other words, there is now essentially no difference between males and females in tested math proficiency.

Differences in mathematics achievement across racial groups also decreased. Black-white differences in 1972 were estimated with an effect size of 1.09; in 1992 the effect size was .87. The gap between Hispanics and whites also decreased. The effect size between whites and Mexicans decreased from .86 to .70; between whites and Puerto Ricans it decreased from 1.1 to .58; between whites and other Hispanics it declined from .86 to .38.

Again, these data indicate that there may be higher SES disparity between high and low SES. The reader is cautioned that this may also result from the fact that the raised ceiling of the 1992 test may have allowed more advantaged students to demonstrate a higher level of knowledge than was possible on the earlier test.

High and low-achieving students. Another angle on the achievement trends is afforded by comparing the characteristics of students at the high and low extremes of the achievement distribution. This allows us to determine whether there have been changes in the relative representation of different subpopulations in the upper and lower ranks of academic achievement. Our target was to analyze the composition of the upper and lower 15 percentage points of the distributions. However, the relatively small number of test items used in the 1972 test produced percentile breaks that were somewhat higher or lower than 15 percent.

Table 2.5 shows that in reading the composition of the lowest 14 percent of the achievement score distribution included a higher proportion of males in 1992 than in 1972. While black and Hispanic youth were overrepresented in the lowest 14 percent in 1972 and 1992, they were less so in 1992. The composition of the highest 18 percent included more Hispanics in 1992 than in 1972.

Similar patterns are found in mathematics. The lower end of the distribution had a higher proportion of male and lower proportion of Hispanic. The representation of Hispanics increased in the higher end of the distribution.

In contrast to the lessening of racial and ethnic achievement differences, the socioeconomic composition of the high ends of both the reading and mathematics distributions became more skewed in favor of middle- and high-SES students. Note that there was a significantly diminished representation of low-SES quartile students in the top group.

Table 2.4
Effect Sizes of Changes in Mathematics Scores for Various Subgroups in 1972, 1980, and 1992

Mathematics Test	**NLS 1972**		**HS&B 1980**		**NELS 1992**	
	Mean	**Effect size**	**Mean**	**Effect size**	**Mean**	**Effect size**
TOTAL	12.94		11.90		48.84	
SEX						
Male	13.79		12.83		49.39	
Female	12.09	0.23	11.39	0.20	48.28	0.08
SOCIOECONOMIC QUARTILE						
Low SES	9.39		8.44		40.68	
Mid SES	12.90	0.50	12.16	0.55	48.76	0.62
High SES	16.62	1.08	15.83	1.14	57.37	1.35
RACE/ETHNICITY						
White	13.95		12.98		51.01	
Black	6.50	1.09	6.69	0.92	39.24	0.87
Asian	15.96	0.29	15.50	0.36	53.27	0.17
Mexican	8.02	0.86	7.54	0.79	41.52	0.70
Puerto Rican	6.33	1.10	7.19	0.84	43.13	0.58
Other Hispanic	8.04	0.86	8.08	0.71	45.81	0.38
TYPE OF SCHOOL						
Public	12.79		11.59		48.19	
Private	15.50	0.37	15.48	0.54	55.77	0.53
Catholic	15.36	0.36	14.35	0.39	54.30	0.43
REGION						
Northeast	13.90		13.36		51.73	
Midwest	13.29	0.09	12.59	0.11	50.14	0.11
South	11.95	0.27	10.07	0.46	46.53	0.37
West	12.37	0.21	12.04	0.18	48.27	0.24
HIGH SCHOOL PROGRAM						
General	10.41	0.97	9.89	0.99	44.79	0.90
Academic	16.66		16.17		55.99	
Vocational	8.78	1.27	8.48	1.24	39.90	1.35
LOCATION OF SCHOOL						
Urban	12.16		10.98		48.72	
Suburban	13.81	0.23	12.70	0.24	50.01	0.09
Rural	12.15	0.00	11.24	0.04	47.49	0.09

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table. 2.5
Percent of Seniors in Highest and Lowest 15 Percent in Reading and Mathematics

	READING				MATHEMATICS			
	LOWEST 14 PERCENT		HIGHEST 18 PERCENT		LOWEST 14 PERCENT		HIGHEST 18 PERCENT	
	72	92	72	92	72	92	72	92
TOTAL	14.3	14.3	18.0	18.0	13.9	13.9	17.7	17.7
SEX								
Male	15.0	17.7	17.5	15.7	11.9	14.1	21.3	19.7
Female	13.5	10.7	18.6	20.5	15.9	13.7	14.1	15.7
RACE/ETHNICITY								
Black	34.9	26.4	4.1	5.4	37.5	33.2	3.1	4.3
White	10.7	11.0	20.3	21.2	10.4	9.8	20.1	20.8
Asian	12.8	15.8	21.3	21.9	9.4	8.7	28.9	27.8
Hispanic	31.5	22.2	4.5	8.6	26.3	21.7	3.6	7.3
SOCIOECONOMIC STATUS								
Low SES	24.9	25.4	9.0	5.9	24.7	27.4	8.7	4.8
Middle Two SES	12.9	12.8	16.4	17.0	12.8	12.2	16.0	14.6
High SES	6.3	6.2	30.6	32.3	5.3	3.8	30.5	36.7

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Participation in Extracurricular Activities

Extracurricular activities offer students opportunities to learn to work together with other students as a team, develop leadership skills, and acquire a host of other personal skills not taught in the traditional academic curriculum.

Tables 2.6a and 2.6b present information on participation in eight common extracurricular activities. Participation in most of the extracurricular activities examined here declined between 1972 and 1992.

- Seniors' participation declined in student government (from 19 to 15 percent, music, drama, or debate (from 33 to 28 percent, athletics (from 45 to 43 percent, cheerleading (from 17 to 8 percent, and vocational clubs (from 22 to 18 percent).
- Participation in honorary societies increased between 1972 and 1992, from 14 percent to 18 percent.
- The proportion of seniors taking part in subject matter clubs remained steady as did involvement in work on the school newspaper or yearbook.

Most of these changes were broadly based. An examination of the trends in participation for the various subgroups indicates that changes were relatively consistent across groups. One exception to this is participation in subject matter clubs, which appears to be attracting larger numbers of high SES, high-achieving seniors in academic track programs.

- Participation in subject matter clubs declined among low SES seniors, from 24 to 19 percent, while the participation rate of high SES seniors increased from 28 to 32 percent. Similar trends are visible among low- and high-achieving students.
- Similarly, the participation in subject clubs decreased among vocational students, from 24 to 15 percent, while participation of academic track students increased from 30 to 34 percent.
- Although as noted above, overall participation in subject matter clubs did not change, the proportion of males increased from 20 to 23 percent, while the proportion of females decreased from 31 to 27 percent. Participation among black seniors declined from 33 to 21 percent.

Table 2.6a
Percent of Seniors Reporting Participation in Extracurricular Activities

	Student Government			Honorary Societies			Subject Matter Clubs			Music, Drama, Debate		
	1972	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**
TOTAL	19.4	18.5	15.4	14.4	17.1	18.5	25.6	23.8	25.1	33.0	36.5	27.9
SEX												
Male	18.1	15.8	13.1	10.7	13.8	14.4	20.3	19.0	22.8	26.8	28.4	23.0
Female	20.8	21.0	17.7	18.1	20.1	22.7	30.9	28.3	27.4	39.2	44.0	32.7
RACE/ETHNICITY												
Black	25.3	23.1	16.7	11.7	13.7	14.0	33.1	28.8	20.6	40.8	43.2	32.2
White	19.2	17.7	15.4	15.1	17.8	19.6	25.0	22.9	25.8	32.8	35.8	28.1
Asian	24.9	23.6	14.6	23.6	23.4	27.2	26.6	29.6	32.3	21.9	36.6	25.8
Hispanic	16.0	16.7	14.6	10.2	11.9	12.4	24.2	24.7	22.6	27.3	31.1	22.3
REGION												
Northeast	18.6	18.4	15.3	12.7	16.0	18.5	21.8	19.6	23.1	31.7	34.5	28.4
Midwest	18.9	16.2	14.9	12.1	15.2	19.1	26.8	21.4	25.4	35.5	37.1	32.0
South	20.6	19.2	15.3	18.0	19.6	19.5	31.5	30.8	28.2	32.9	37.9	25.6
West	19.9	20.3	16.7	15.7	15.7	16.2	14.3	21.9	21.6	31.0	35.2	25.6
SOCIOECONOMIC STATUS												
Low	14.0	13.3	11.5	10.3	11.1	10.2	24.4	22.6	19.4	30.1	31.0	24.1
Middle	18.6	18.0	15.2	13.2	16.3	16.8	25.2	23.8	24.5	32.0	35.8	27.8
High	26.6	25.2	19.6	21.2	25.1	29.7	27.7	25.7	31.7	38.0	43.8	31.6
HIGH SCHOOL PROGRAM												
General	15.1	14.4	11.0	8.1	9.6	9.1	21.2	19.6	18.3	30.8	34.5	26.3
Academic	26.0	26.7	21.6	22.3	29.0	30.9	29.6	28.7	34.2	39.4	44.1	32.8
Vocational	11.9	11.5	8.9	7.3	8.9	5.8	23.8	23.1	14.7	23.1	27.7	16.2
COMPOSITE TEST QUARTILE - MATH AND READING												
Low	13.9	12.0	10.8	4.8	6.1	5.6	24.6	23.5	18.1	29.0	31.8	23.3
Middle	18.4	17.6	14.4	10.1	12.6	11.1	24.3	23.3	23.3	31.8	35.6	26.5
High	27.4	25.4	20.2	33.7	36.3	42.2	29.0	27.1	37.1	39.4	43.4	35.2

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table 2.6b
Percent of Seniors Reporting Participation in Extracurricular Activities

	Athletics			Cheerleading			Newspaper or Yearbook			Vocational Clubs		
	1972	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**
TOTAL	44.9	51.8	42.9	17.3	15.1	7.5	20.2	19.9	18.8	22.3	23.1	17.7
SEX												
Male	58.2	64.0	55.3	5.3	4.5	2.0	14.7	15.4	14.0	15.5	19.1	14.7
Female	31.6	40.6	30.3	29.1	24.8	13.0	25.5	24.0	23.5	29.0	26.7	20.6
RACE/ETHNICITY												
Black	49.6	54.4	41.4	21.2	17.6	10.6	20.7	17.8	14.3	32.7	30.1	22.5
White	45.1	51.6	44.1	17.3	14.9	7.4	20.4	20.1	19.7	21.3	22.3	17.6
Asian	36.0	48.8	45.2	13.1	14.6	5.1	16.2	21.4	18.9	12.1	9.6	8.8
Hispanic	38.5	49.4	35.3	14.8	12.3	6.6	16.2	15.8	16.8	26.3	27.3	16.4
REGION												
Northeast	47.2	54.5	48.6	14.0	11.5	6.9	22.0	24.6	28.3	13.1	10.6	8.1
Midwest	46.7	52.8	45.8	20.0	15.3	8.0	21.0	18.4	18.2	22.0	20.0	18.4
South	42.2	48.2	38.8	18.7	18.0	8.5	20.1	18.8	15.0	36.3	40.0	27.2
West	42.3	52.9	40.6	16.0	14.0	6.0	16.0	16.8	16.5	15.7	15.8	10.0
SOCIOECONOMIC STATUS												
Low	38.7	43.2	33.9	14.8	13.0	6.7	17.6	15.7	14.2	30.9	30.6	24.8
Middle	44.6	52.1	41.7	18.4	15.9	8.0	20.2	19.2	17.5	22.6	24.1	18.5
High	51.7	61.7	53.9	17.7	15.6	7.7	22.8	25.3	25.5	13.1	13.4	9.3
HIGH SCHOOL PROGRAM												
General	41.0	49.9	37.8	15.9	14.0	7.1	17.1	16.7	14.6	23.3	22.6	16.7
Academic	53.4	60.1	50.8	19.0	17.2	8.8	24.3	26.9	24.9	14.8	13.1	12.6
Vocational	32.9	42.4	30.1	15.9	13.3	4.9	16.0	13.2	11.2	36.3	39.3	41.2
COMPOSITE TEST QUARTILE - MATH AND READING												
Low	38.3	46.3	40.3	17.0	15.0	8.5	16.6	14.6	12.0	31.0	33.0	25.0
Middle	45.4	49.4	42.3	18.1	16.0	7.6	18.7	18.7	17.1	22.2	24.2	20.0
High	50.0	54.0	49.0	16.2	13.5	7.9	26.7	27.1	27.9	13.8	12.4	11.4

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

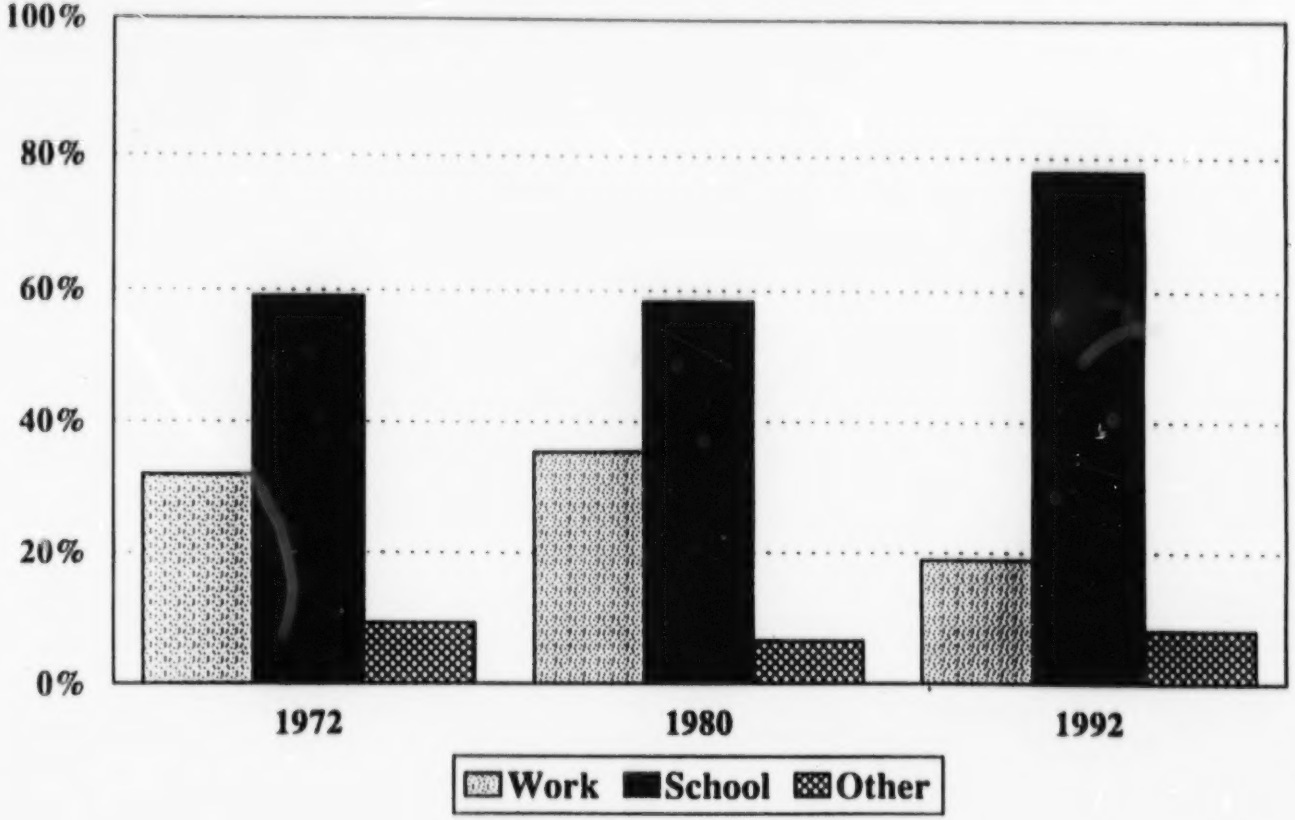
Chapter 3. Seniors' Plans for Next Year

The declines in vocational program enrollments seen in the last chapter suggest that fewer seniors are planning to enter the labor force directly after high school. Presumably they would then be oriented toward some form of postsecondary education, but it is not clear which of several institutional options is absorbing them. This chapter focuses on seniors' educational and work plans for their first year after high school, and some of the factors that influenced their decisions. Just as some patterns of change in program and course enrollments differed by sex, race, and socioeconomic status, patterns of postsecondary plans might also differ.

Figure 3.1 provides information on the percent of seniors who intend to engage in full-time work, postsecondary education, or some other activity (for example, full-time homemaking or travel) during the year immediately following high school graduation.

- The proportion of seniors planning to work has fallen from 32 percent in 1972 to 14 percent in 1992.
- In 1972, 59 percent of seniors reported that they would continue on to school immediately after high school graduation compared to 78 percent in 1992.
- Compared to 1972, the proportion of seniors planning to engage in "other" activities such as travel, part-time work, or full-time homemaking declined slightly from 9 percent to 8 percent in 1992.

Figure 3.1
Seniors' Plans for Year
Following High School Graduation



Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Plans to Work Full-time in the Year Following Graduation

The proportion of seniors who planned to work full-time in the year following graduation has fallen dramatically as shown in Table 3.1. In 1972, 32 percent of seniors planned to work full-time during the year after high school graduation; in 1992, only 14 percent of seniors planned to work full-time during the year following high school graduation. This change was evident across all regions.

In both 1972 and 1992, males were more likely than females to plan on working immediately after high school. However, during this 20 year period, the percentage of both groups who planned to work immediately after high school graduation declined. The percentage of females who planned to work full-time after high school decreased by half from 29 percent to 13 percent, while the percentage of males declined from 35 percent to 16 percent.

Differences between whites and other groups in postsecondary plans that were apparent in 1972 had disappeared by 1992. In 1972, blacks and Hispanics were more likely than whites to plan on working after high school graduation: 37 percent of blacks and 38 percent of Hispanics planned to work compared to only 31 percent of whites. A smaller percentage of Asian seniors, 18 percent, planned to work full-time after high school graduation. By 1992, whites were no more or less likely to work after graduation than blacks, Asians, or Hispanics.

The relationship between socioeconomic status and plans to work after graduation that was evident in 1972 persisted into 1992. In both years, seniors from families in the lowest SES quartile were more likely to plan to work than seniors from the highest SES quartile. In 1972, 47 percent of seniors from families in the lowest socioeconomic status planned to work after high school graduation compared to 14 percent of those from the highest SES quartile. In 1992, 25 percent of seniors in the lowest SES quartile planned to work, compared to only 5 percent of those in the highest SES quartile.

The decrease in the percentage of seniors planning to work after graduation can be seen in all three types of high school programs. In 1972, over half (56 percent) of seniors in vocational programs planned to work full-time following high school graduation, compared to only 32 percent in 1992. In 1972, 42 percent of seniors in general education programs planned to work following high school graduation, compared to 19 percent in 1992. Only a small proportion (13 percent) of 1972 seniors in academic programs planned to work after graduation; in 1992 this had decreased to 5 percent.

Seniors who tested in the lowest quartile were far more likely to plan to work after high school than those who tested in the highest quartile in all three years.

Table 3.1
Percent of Seniors Planning to Work Full-Time in Year Following High School Graduation

	1972	1980	1992
TOTAL	31.9	35.0	14.2
SEX			
Male	34.6	40.3	15.9
Female	29.2	30.0	12.6
RACE/ETHNICITY			
Black	37.4	35.8	11.4
White	30.6	35.2	14.4
Asian	18.1	12.8	10.8
Hispanic	38.5	41.3	16.4
REGION			
Northeast	31.4	32.6	11.2
Midwest	33.8	37.0	15.0
South	33.2	38.4	14.7
West	27.5	31.5	15.2
SOCIOECONOMIC STATUS			
Low	46.6	49.7	24.8
Middle	33.4	36.6	14.1
High	13.8	15.8	5.1
HIGH SCHOOL PROGRAM			
General	41.9	44.4	19.1
Academic	13.2	13.4	4.8
Vocational	55.9	55.9	32.0
COMPOSITE TEST QUARTILE - MATH AND READING			
Low	52.3	56.5	26.7
Middle	30.6	41.3	14.4
High	12.5	29.0	4.2

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Type of Postsecondary Institution Seniors Plan to Attend in the Year Following Graduation

The percentage of high school seniors who planned to attend four-year colleges or academic programs at two year colleges immediately after high school increased between 1972 and 1992, as can be seen in Figure 3.2. Overall, 59 percent of high school seniors in 1972 planned to continue their education immediately after graduation. In 1992, 76 percent reported having such plans. Blacks showed a significant increase in postsecondary plans over this period (20 percent) as did Hispanics (23 percent).

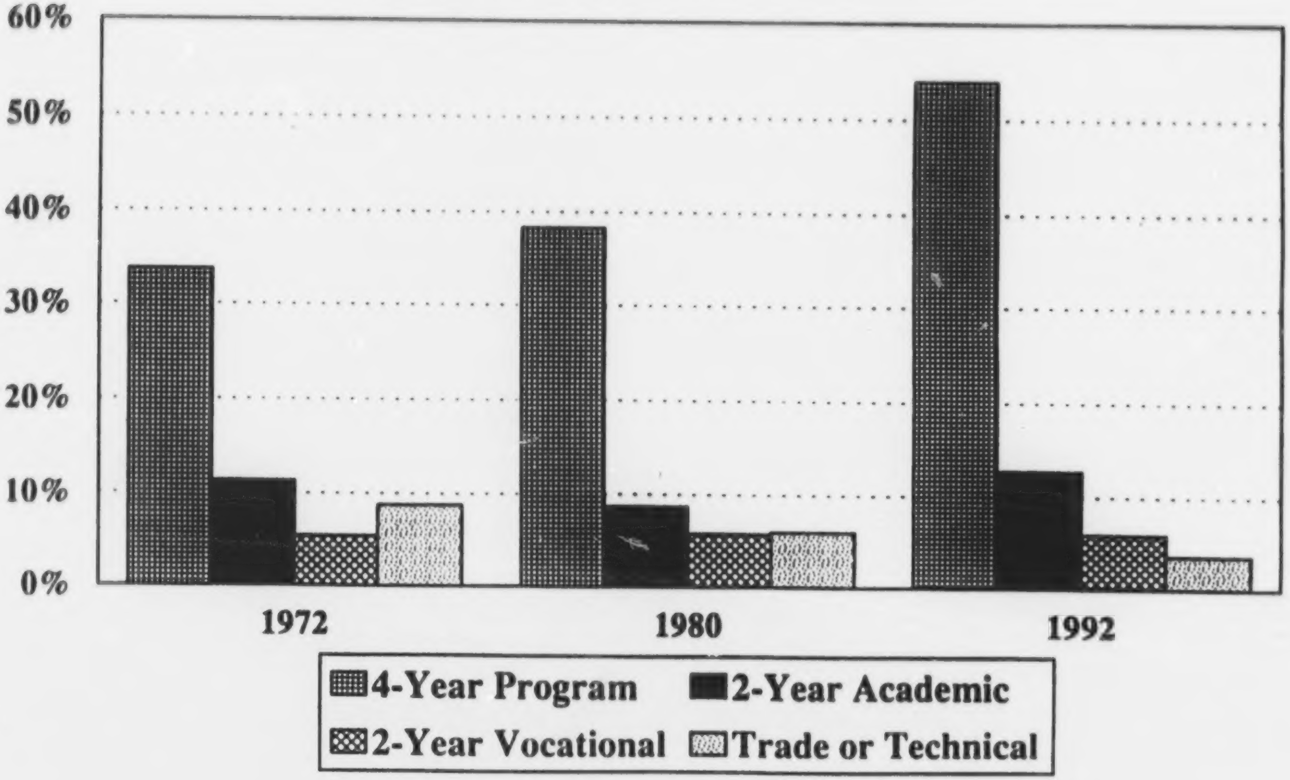
The proportion of seniors planning to enroll in vocational programs at two year colleges remained constant, while the percentage of seniors planning to attend trade or technical schools declined.

- In 1972, about one-third (34 percent) of all seniors planned to attend a four-year college in the year following high school graduation; while in 1992, over half of all seniors planned to attend a four-year college.
- The percentage of seniors planning to enroll in an academic program in a two-year college increased slightly from 11 percent in 1972 to 13 percent in 1992.
- Approximately the same proportion of seniors in 1972 (5 percent) and 1992 (6 percent) planned to enroll in a vocational program at a two-year college.
- About 9 percent of 1972 seniors planned to enroll in a trade or technical school after high school. By 1992, only half that percentage (4 percent) planned to continue their education at a trade or technical school.

These changes have not occurred uniformly across all subgroups. Very different patterns of change have occurred among males and females (see Table 3.2).

- In 1972, a slightly higher percentage of males (35 percent) than females (32 percent) planned to go on to a four-year college immediately after high school. By 1992, this was reversed--a significantly greater percentage of females (58 percent) than males (50 percent) planned to attend a four-year college in the year after high school graduation.
- In 1972, approximately the same proportion (11 percent) of males and females planned to enroll in academic programs in two-year colleges in the year after high school graduation. By 1992, a larger proportion of females (15 percent) than males (11 percent) planned to attend a two-year academic program.
- In 1972, females were more likely than males to plan to attend a trade or technical school (10 percent of females compared to 7 percent of males). In 1992, a slightly higher proportion of males than females planned to enroll in a trade or technical school during the year after high school graduation.

Figure 3.2
Percent of Seniors Attending Various
Types of Postsecondary Institutions



Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

The patterns of attendance among ethnic and racial groups has been relatively stable. While the proportion of all racial and ethnic groups continuing their educations at four-year colleges increased, the between-group differences have remained fairly constant.

- Black and white seniors planned to attend four-year colleges in similar proportions in both 1972 and 1992. In 1972, 32 percent of blacks and 35 percent of whites planned to attend a four-year college. In 1992, 52 percent of black seniors and 55 percent of white seniors planned to attend a four-year college.

- Hispanic seniors were less likely than white seniors to plan to attend a four year college in both 1972 and 1992 (24 percent of Hispanics compared to 35 percent of whites in 1972 and 46 percent of Hispanics compared to 55 percent of whites in 1992).

- In 1992, Asian seniors were more likely than white seniors to plan to attend a four-year college immediately after high school graduation (65 percent of Asians compared to 55 percent of whites).

- A larger proportion of blacks and Hispanics planned to attend an academic program in a two-year college in 1992 than in 1972: the proportion of blacks increased from 5 percent to 11 percent, while the proportion of Hispanics increased from 12 percent to 20 percent. No change occurred among white seniors.

- In comparison to 1972, lower percentages of black, of white, and of Hispanic seniors planned to continue their education at a trade or technical school in 1992. The difference for Asian seniors was not significant.

There has been marked growth in the proportion of seniors in all high school programs (general education, academic, and vocational) planning to attend a four-year college after high school graduation. It is interesting to note the number of seniors planning to attend four-year colleges who have not completed college preparatory programs.

- In 1972, 18 percent of seniors enrolled in general education programs planned to go on to a four-year college immediately. By 1992, that number had more than doubled: nearly 40 percent of seniors in general education programs planned to continue on to a four-year college.

- The percentage of vocational students planning to continue their education at a four-year or two-year college increased between 1972 and 1992, while the percentage planning to attend trade or technical school decreased.

The proportion of seniors planning to attend a four-year college has increased in all socioeconomic groups and among seniors at all achievement levels.

Table 3.2 **Percent of All Seniors Who Plan to Continue Education Next Year at Four-Year Colleges, Two-Year Academic Programs, Two-Year Vocational Programs, or Trade and Technical Schools**

	Four-Year Program			Two-Year Academic			Two-Year Vocational			Trade or Technical School		
	1972	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**
TOTAL	33.6	38.3	54.0	11.3	8.7	12.8	5.4	5.8	5.9	8.8	6.0	3.6
SEX												
Male	34.6	37.2	50.4	11.4	7.1	11.0	5.2	5.2	6.1	7.2	5.4	4.1
Female	32.5	39.2	57.5	11.2	10.2	14.7	5.5	6.4	5.7	10.4	6.7	3.2
RACE/ETHNICITY												
Black	32.0	39.0	51.7	5.4	6.1	10.6	4.8	5.4	6.2	11.6	7.5	4.9
White	34.8	38.3	54.9	12.0	8.8	12.3	5.3	5.7	5.9	8.6	5.8	3.6
Asian	46.7	61.9	64.6	17.6	12.1	11.9	7.7	7.2	3.5	3.6	3.6	2.3
Hispanic	23.6	28.1	46.3	11.6	9.5	19.7	10.5	6.9	6.9	7.9	6.8	3.3
REGION												
Northeast	37.2	44.7	63.3	11.7	18.7	11.6	4.7	4.4	3.6	7.8	5.5	2.4
Midwest	33.5	37.4	56.0	7.8	22.8	10.0	5.0	5.5	6.5	10.3	7.2	4.4
South	34.0	35.8	32.4	10.2	8.2	11.5	4.2	5.5	6.3	9.9	6.1	4.2
West	27.4	33.1	16.4	18.2	14.1	20.4	8.9	8.6	6.6	6.0	5.3	2.9
SOCIOECONOMIC STATUS												
Low	18.7	21.7	32.1	6.9	6.2	14.5	5.0	5.8	8.0	11.1	8.2	6.5
Middle	29.2	34.2	52.3	12.3	9.7	14.4	6.1	6.6	6.8	9.8	6.9	3.5
High	58.3	64.3	76.2	13.6	9.2	8.5	4.2	4.4	2.4	4.4	2.2	1.4
HIGH SCHOOL PROGRAM												
General	17.6	25.0	39.8	10.9	9.0	17.1	5.8	6.2	7.3	9.7	6.8	5.0
Academic	57.7	66.7	75.2	14.9	9.8	10.0	4.8	4.1	2.5	5.2	2.8	1.4
Vocational	7.1	12.5	20.8	4.4	6.2	10.7	5.9	7.7	14.4	14.7	10.2	8.1
COMPOSITE TEST QUARTILE - MATH AND READING												
Low	10.8	14.8	22.4	6.5	5.6	17.4	4.9	6.2	10.5	11.4	7.9	7.8
Middle	30.6	26.2	51.2	13.8	9.0	14.7	6.0	7.2	6.6	9.9	8.2	3.9
High	65.0	42.5	81.7	10.8	10.9	5.1	3.9	6.5	1.8	3.8	6.4	0.8

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

College Selection

Students consider many factors when selecting a college, including financial considerations, such as the cost of attendance and the availability of financial aid; and scholastic considerations, such as the availability of desired courses and the institution's academic reputation.

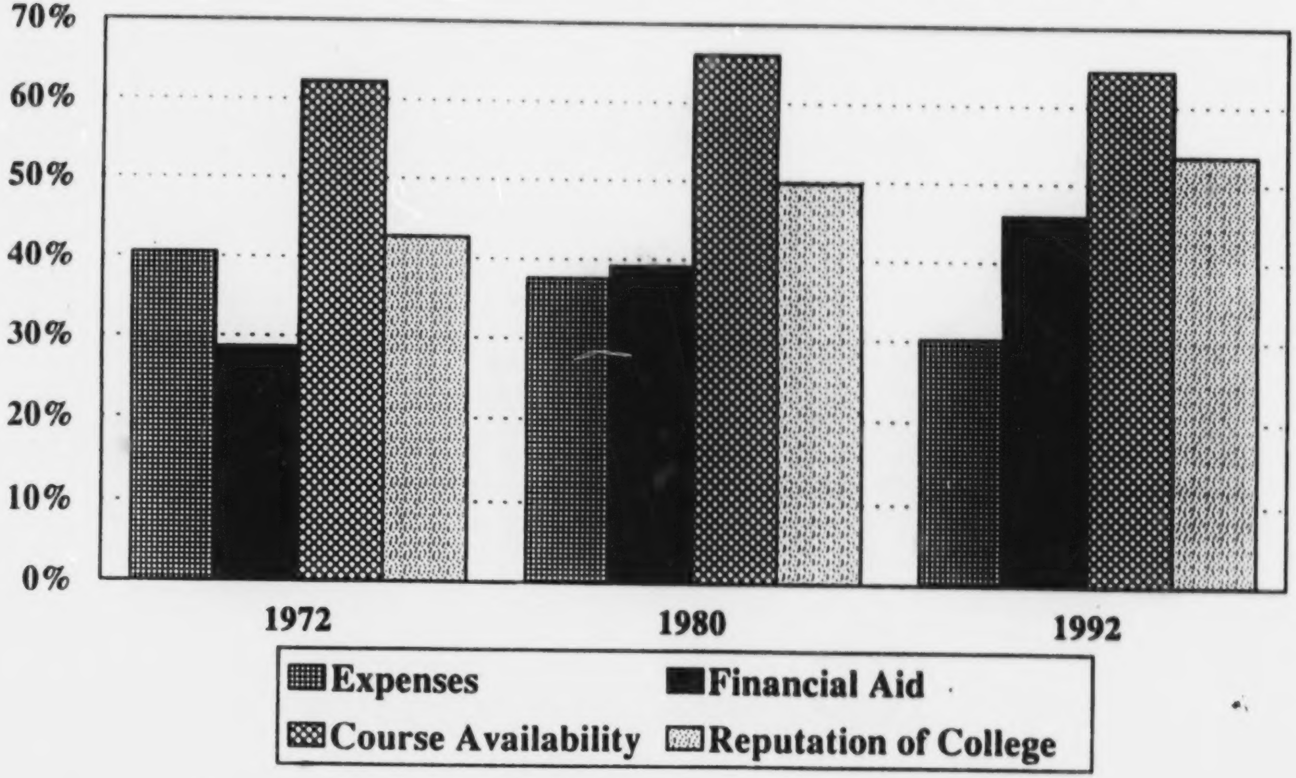
During the past 20 years, attention has shifted away from a concern with tuition and expenses, toward a concern with the amount of aid available to finance the cost of education. Figure 3.3 presents information on the percentage of seniors who consider financial aid, expenses, academic reputation, and course offerings to be "very important" in choosing a college. The proportion of college-bound seniors who reported that expenses were "very important" in selecting a college declined between 1972 and 1992. During the same period, concern with the availability of financial aid increased.

- In 1972, 40 percent of college-bound seniors said that tuition and expenses were "very important" considerations in selecting a college; in 1992, that number had fallen to 30 percent.
- In 1972, 29 percent of college-bound seniors reported that the availability of financial aid was a "very important" consideration in choosing a college; in 1992, 46 percent said that financial aid was "very important."

Concerns about college expenses and financial aid varied among subgroups of the population, and groups have changed somewhat differently over time, as shown in Tables 3.3a & b.

- The percentage of black, white, and Hispanic seniors who reported that tuition and expenses were very important factors in selecting a college declined between 1972 and 1992. No significant difference was found for Asian seniors.
- In both 1972 and 1992, college-bound males were less likely than college-bound females to say that college expenses and financial aid were "very important."
- In 1972, less than one-quarter (24 percent) of white seniors reported that the availability of financial aid was a very important consideration in choosing a college; by 1992 that number had increased to 40 percent.
- While the percentage of black seniors who reported that financial aid was very important did not change significantly between 1972 and 1992, black and Hispanic seniors were more likely than white seniors in either year to say financial aid was a very important consideration in selecting a college.
- Concern about the availability of financial aid to meet college expenses increased among seniors from all socioeconomic groups, including those from families in the highest socioeconomic quartile.

Figure 3.3
Percent of College-Bound Seniors Reporting Various Financial Factors "Very Important" in Choosing a College



Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

The percentage of seniors who report that course availability is a very important consideration when selecting a college increased slightly between 1972 and 1992.

The academic reputation of postsecondary institutions was considered to be "very important" by 43 percent of seniors in 1972 and 54 percent of seniors in 1992. An increased concern about academic reputation was evident among almost all subgroups examined.

Table 3.3a
Percent of College-Bound Seniors Who Reported Various Financial Factors Were "Very Important" in Selecting a College

	Expenses			Financial Aid		
	1972	**1980**	**1992**	**1972**	**1980**	**1992**
TOTAL	40.5	37.5	30.2	28.6	39.1	45.9
SEX						
Male	37.1	32.9	26.8	26.5	36.5	41.2
Female	44.0	41.4	33.2	30.8	41.2	50.1
RACE/ETHNICITY						
Black	57.2	58.3	44.8	64.7	67.8	67.4
White	38.5	34.0	26.8	24.3	34.2	40.3
Asian	37.9	37.5	29.0	24.1	36.3	44.2
Hispanic	53.7	47.4	38.4	54.5	52.4	61.8
REGION						
Northeast	41.8	36.0	26.7	27.4	41.6	42.0
Midwest	41.4	37.1	28.2	30.1	37.5	44.5
South	39.7	40.7	33.0	30.2	41.5	49.1
West	38.2	35.4	31.6	26.1	35.0	46.2
SOCIOECONOMIC STATUS						
Low	54.9	51.4	42.3	52.6	58.7	63.8
Middle	43.7	39.2	30.9	30.2	40.8	47.8
High	29.8	24.4	20.8	16.0	22.1	30.7
HIGH SCHOOL PROGRAM						
General	39.8	40.0	32.5	27.9	39.8	45.3
Academic	40.4	33.9	26.3	28.0	37.0	44.5
Vocational	42.7	41.8	39.0	35.0	42.4	55.3
COMPOSITE TEST QUARTILE - MATH AND READING						
Low	46.8	46.1	34.3	39.6	47.9	47.2
Middle	39.2	39.4	30.8	27.4	39.2	47.3
High	39.7	29.6	21.6	26.0	33.3	42.0

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table 3.3b
Percent of College-Bound Seniors Who Reported Various Academic Factors Were "Very Important" in Selecting a College

	Course Availability			Reputation of Institution		
	1972	**1980**	**1992**	**1972**	**1980**	**1992**
TOTAL	62.2	66.1	64.5	42.7	49.8	53.6
SEX						
Male	57.3	62.0	60.6	37.8	46.1	49.9
Female	67.3	69.6	68.0	47.8	52.8	56.9
RACE/ETHNICITY						
Black	60.4	64.1	67.8	43.4	47.8	57.8
White	62.6	67.1	64.6	43.1	50.4	52.6
Asian	59.4	72.2	64.4	42.4	55.8	64.8
Hispanic	53.3	56.0	60.9	34.4	44.0	51.1
REGION						
Northeast	70.4	73.7	70.5	43.5	55.4	62.2
Midwest	61.3	66.6	65.6	44.1	48.9	51.5
South	56.2	62.0	61.5	43.7	49.6	51.9
West	59.4	62.2	61.8	38.1	44.5	50.2
SOCIOECONOMIC STATUS						
Low	58.1	61.0	64.3	38.1	41.9	45.3
Middle	63.0	66.8	64.7	41.1	48.4	50.6
High	62.8	68.9	64.3	46.7	57.7	64.2
HIGH SCHOOL PROGRAM						
General	53.2	58.4	60.6	31.8	40.3	43.3
Academic	65.4	73.2	68.4	47.1	59.4	63.3
Vocational	60.5	60.9	66.5	36.0	41.1	42.5
COMPOSITE TEST QUARTILE - MATH AND READING						
Low	52.1	48.6	47.0	34.0	38.5	38.1
Middle	61.7	66.7	65.8	39.8	46.7	48.3
High	66.7	75.1	69.1	49.7	61.1	66.9

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Expected Major Field of Study

College-bound seniors' expectations concerning college majors changed somewhat during the period being studied, as presented in Table 3.4. However, readers should interpret this table with caution, because in 1980 and 1992, a new response option, "a pre-professional field, (for example, prelaw, predentistry, and premedicine)," was given to seniors. Thus, while figures from 1972 are presented in Table 3.4, the results discussed here are based on comparisons between 1980 and 1992.

The proportion of college-bound seniors intending to major in a number of fields increased between 1980 and 1992.

- The percentage of seniors expecting to major in education increased from 6 percent in 1980 to 10 percent in 1992.
- A larger percentage of college-bound seniors planned to major in pre-professional areas in 1992 than in 1980, 11 percent compared to 7 percent.
- Expected majors in social sciences increased from 8 percent in 1980 to 11 percent in 1992.

The percentages of college-bound seniors anticipating majors in a number of fields declined between 1980 and 1992.

- In 1992, 20 percent of college-bound seniors planned to major in business, compared to 25 percent in 1980.
- The proportion of college-bound seniors planning to major in computer and information science fell from 5 percent to 3 percent.

Information on the distribution of majors by sex, race, and socioeconomic status is presented in Appendix A.

Table 3.4
Percent of College-Bound Seniors Expecting to Major in Each Field

	1972	1980	1992
Agriculture	3.2	3.4	1.7
Architecture	1.9	2.4	2.2
Art	4.1	5.6	3.8
Biological Sciences	9.8	2.8	3.7
Business	13.5	24.7	19.6
Communications	2.0	3.7	4.3
Computer and Information Science	1.7	5.0	3.0
Education	12.4	6.3	10.3
Engineering	5.4	10.1	9.5
English	3.2	2.2	2.3
Ethnic Studies	0.2	0.1	0.3
Foreign Languages	1.4	1.0	0.6
Health Occupations	12.3	9.7	10.2
Home Economics	0.2	2.1	0.9
Interdisciplinary Studies	1.6	0.1	0.2
Mathematics	2.1	1.0	0.9
Music	3.4	2.3	1.9
Philosophy	1.4	0.6	0.4
Physical Science	2.7	1.8	1.8
Pre-Professional[1]	0.0	7.2	11.0
Social Sciences	17.5	7.8	11.2

[1] Category not included in 1972 questionnaire. This category includes "for example, prelaw, predentistry, and premedicine."

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Chapter 4. Seniors' Plans for the Future

Educational Expectations

Students' long-term expectations for education are as important to examine as their short-term plans. While not all seniors plan to attend postsecondary school immediately, nearly all high school seniors now expect to continue their education eventually. Figure 4.1 presents information on the percentage of all seniors who expect to end their education with high school, attend college, complete a four-year college, or continue their education in graduate school.

- In 1972, 19 percent of seniors expected to end their schooling with high school. By 1992, only 5 percent of seniors reported that they would not continue their education past high school.

- The proportion of seniors who expected to pursue some further education, but did not think they would finish college, also declined from 31 percent in 1972 to 25 percent in 1992.

- While the proportion of seniors who expected to end their education with their bachelors degree was about the same in 1972 (38 percent) as in 1992 (36 percent), the proportion of seniors expecting to complete college and continue on to graduate school increased substantially. In 1972, 13 percent of seniors thought they would go on to earn a graduate degree; in 1992, one-third of all seniors expected to earn some type of graduate degree.

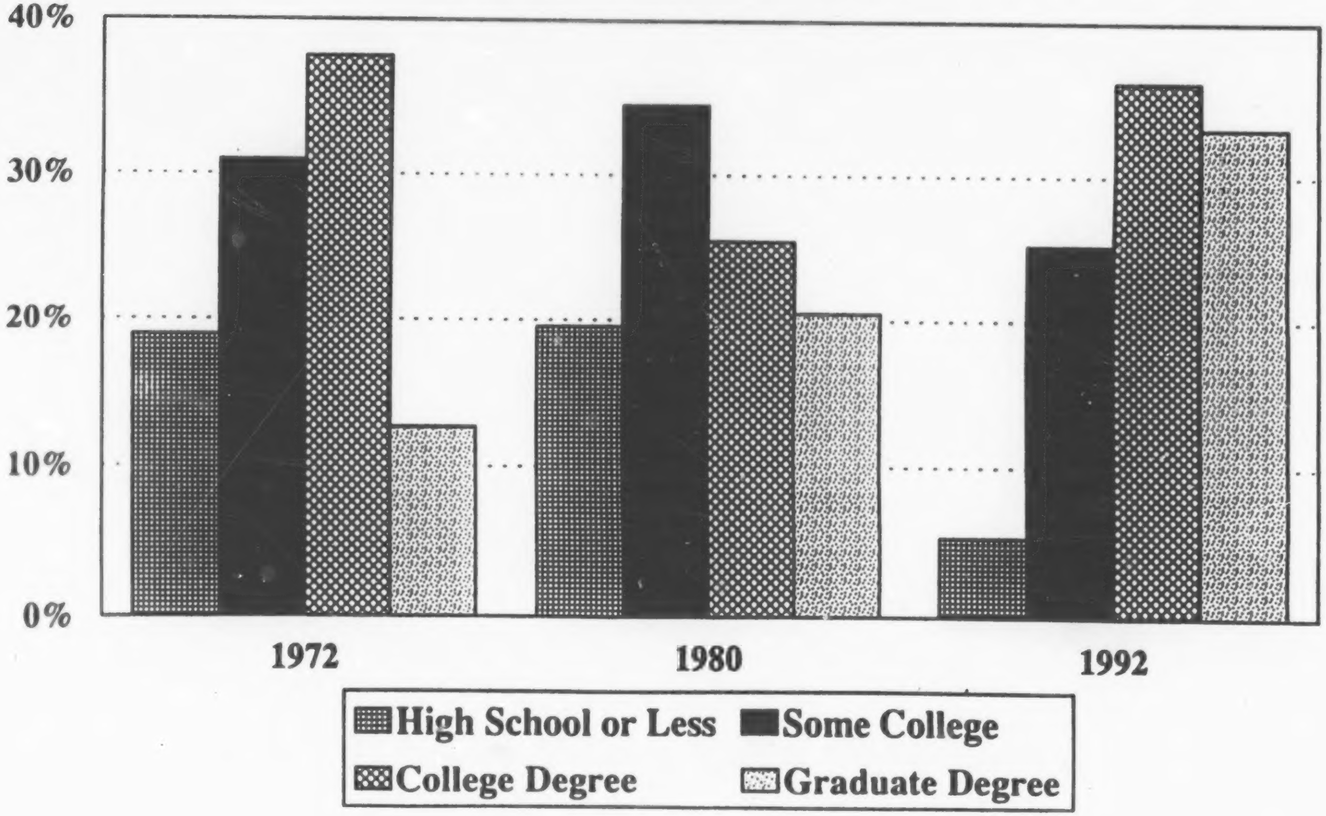
As demonstrated in Table 4.1, sex differences in educational expectations were marked in both 1972 and 1992. In the earlier year, males were more likely than females to expect to complete the highest levels of education; in the most recent year, females were more likely than males to expect to complete graduate school.

- In 1972, 22 percent of females compared to 16 percent of males did not expect to continue their education past high school. In 1992, a lower percentage of females than males expected to limit their education to high school, 4 percent of females compared to 7 percent of males.

- Males were more likely than females to expect to complete college or graduate school in 1972. In that year, 39 percent of males thought they would complete college, and another 16 percent expect to pursue graduate education. Among females, 36 percent thought they would complete college and another 9 percent expected to pursue graduate education.

- In 1992, females and males were equally likely to expect to end their education with a bachelors degree. Furthermore, females were more likely than males to expect to earn a graduate degree. Thirty-six percent of both sexes intended to end their education with a bachelors degree. However, a larger proportion of females than males intended to attain a graduate degree, 35 percent compared to 31 percent.

Figure 4.1
Percent of Seniors Expecting to Attain Various Levels of Education



Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Heightened expectations were apparent among all racial and ethnic groups, as well as socioeconomic groups.

- Thirty-eight percent of black seniors in 1992 expected to obtain a graduate degree compared to only 14 percent in 1972.
- Among whites, the proportion expecting to pursue a graduate degree increased from 13 percent in 1972 to 32 percent in 1992.
- Aspirations also increased among Asian seniors; in 1992, 42 percent expected to attain a graduate degree, compared to 16 percent in 1972.
- In 1992, 31 percent of Hispanic seniors expected to earn a graduate degree, compared to 9 percent 20 years earlier.
- Among seniors from families in the lowest socioeconomic quartile, the proportion of those who expected to earn graduate degrees increased from 6 percent in 1972 to 21 percent in 1992.

Seniors' preparation in high school for further academic work is somewhat related to their aspirations.

- Forty-seven percent of seniors in academic high school programs in 1992 expected to attain a graduate degree, an increase from 21 percent in 1972.
- Expectations for graduate school have increased among those in general and vocational high school programs, even though they have not taken a college preparatory program in high school. In 1992, nearly a quarter (23 percent) of seniors in general education programs expected to attain a graduate degree, compared to 5 percent in 1972. And 15 percent of those in vocational programs expected to attain a graduate degree, compared to only 3 percent twenty years earlier.

Table 4.1
Percent of Seniors Expecting to Complete Various Levels of Education

	High School or Less			Some College			Finish College			Graduate School		
	1972	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**
TOTAL	18.9	19.5	5.3	30.9	34.5	25.3	37.6	25.5	36.1	12.6	20.5	33.3
SEX												
Male	15.5	21.0	6.8	29.0	31.7	26.0	39.2	26.0	36.2	16.3	21.2	31.1
Female	22.2	18.2	3.9	32.7	37.0	24.6	36.0	25.1	36.1	9.1	19.8	35.4
RACE/ETHNICITY												
Black	15.0	17.0	4.7	34.0	35.4	23.5	37.5	24.3	34.0	13.5	23.2	37.9
White	18.8	20.1	5.4	30.4	34.3	25.1	38.2	26.0	37.2	12.6	19.6	32.3
Asian	8.4	3.3	2.9	23.1	18.6	19.0	52.1	34.9	35.7	16.5	43.2	42.5
Hispanic	16.3	25.0	6.3	41.2	39.1	31.4	33.3	19.2	31.3	9.2	16.8	31.0
REGION												
Northeast	20.6	19.8	3.9	27.6	29.7	21.5	37.7	26.0	37.1	14.1	24.5	37.5
Midwest	21.0	20.7	5.8	31.9	36.3	27.2	36.0	26.0	37.8	11.0	17.0	29.2
South	18.0	22.1	5.9	29.6	34.4	25.6	39.1	24.6	34.6	13.2	19.0	33.8
West	13.6	14.5	5.0	36.2	39.0	25.9	37.9	24.7	35.3	12.4	21.8	33.8
SOCIOECONOMIC STATUS												
Low	33.6	34.4	10.8	36.0	39.5	40.0	24.5	16.2	27.9	6.0	10.0	21.2
Middle	19.8	18.5	4.9	35.6	39.6	26.9	35.1	25.3	40.1	9.5	16.6	28.2
High	5.8	5.0	1.3	17.8	19.3	9.3	52.6	36.6	36.1	23.8	39.2	53.3
HIGH SCHOOL PROGRAM												
General	28.3	27.0	8.4	40.4	40.8	33.7	26.4	20.8	34.7	4.9	11.4	23.3
Academic	5.5	4.3	0.9	19.4	18.4	10.5	54.2	39.2	41.7	20.9	38.2	47.0
Vocational	39.9	32.8	10.7	46.6	50.5	53.3	10.9	10.8	21.4	2.6	5.9	14.6
COMPOSITE TEST QUARTILE - MATH AND READING												
Low	37.8	38.0	13.4	42.9	43.4	47.8	15.7	11.8	20.7	3.6	6.8	18.0
Middle	19.9	23.2	5.1	35.1	44.2	29.6	35.9	20.3	38.9	9.0	12.3	26.4
High	5.4	12.8	0.9	15.0	35.6	6.1	54.8	30.7	38.7	24.7	20.8	54.3

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Occupational Expectations

Corresponding to the high educational expectations of the Class of 1992 are class members' expectations for the kinds of occupations they will have. There has been a noticeable shift away from occupations requiring less education toward those requiring college or graduate education.

- Major increases occurred in the proportion of seniors who expected occupations as managers (from 3 percent in 1972 to 6 percent in 1992) or professionals (from 45 to 59 percent), as shown in Table 4.2.

At the same time, the proportion of seniors who planned to hold some blue-collar occupations declined during this 20 year period. Relatively fewer seniors in 1992 than in 1972 expected to have occupations that can be classified as clerical, craftsmen, farmers, homemakers, laborers, operatives, sales, or service.

- Major declines occurred in the proportion of seniors who expected clerical occupations, decreasing from 14 percent to 4 percent, and crafts occupations, decreasing from 8 percent to 3 percent.

- Decreases also occurred in farm occupations (from 2 percent to 1 percent), homemaking (from 3 percent to 1 percent), unskilled labor (from 2 percent to 1 percent), operatives (from 2 to 1 percent), sales (from 3 to 2 percent), and service occupations (from 4 to 3 percent).

The proportion of seniors expecting other occupations that can require a range of educational experience increased.

- Increases occurred in the proportion of seniors who expected jobs in the military (2 percent to 3 percent), as proprietors (from 2 percent to 7 percent), and as protective service workers (from 2 to 4 percent).

Complete crosstabulations examining occupational aspirations by sex and race/ethnicity can be found in Table 4.3.

Table 4.2
Percent of Seniors Who Expect to be in Various Occupations

	1972	1980	1992
Clerical	14.2	9.8	3.5
Craftsman	7.6	8.1	2.8
Farmer	1.6	2.0	1.0
Homemaker	3.1	2.9	1.2
Laborer	2.5	1.9	0.8
Manager	3.1	7.2	6.0
Military	2.4	2.0	3.2
Operative	2.3	2.7	1.2
Professional	45.4	44.0	59.0
Proprietor	1.8	4.0	6.7
Protective Services	2.2	1.8	4.2
Sales	3.0	2.1	1.9
Service	4.2	3.5	2.6
Technical	6.6	8.2	6.0

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table 4.3
Percent of Seniors Who Expect to be in Various Occupations by Sex and Race

		1972	1980	1992
Clerical (1)		14.2	9.8	3.5
Sex:	Male	1.9	1.3	1.2
	Female	25.5	17.7	5.8
Race:	Black	26.5	12.5	3.6
	White	13.1	9.3	3.2
	Asian	10.2	6.9	2.8
	Hispanic	23.4	12.5	5.2
Craftsman (2)		7.5	8.1	2.8
Sex:	Male	15.1	15.7	5.3
	Female	0.5	1.1	0.3
Race:	Black	3.6	6.0	2.0
	White	7.7	8.6	3.0
	Asian	6.0	3.9	2.0
	Hispanic	7.6	9.0	2.5
Farmer (3)		1.6	2.0	1.0
Sex:	Male	2.7	3.4	1.6
	Female	0.6	0.8	0.4
Race:	Black	0.4	0.5	0.6
	White	1.6	2.3	1.1
	Asian	Low N	Low N	Low N
	Hispanic	0.9	2.2	0.8
Homemaker (4)		3.1	2.9	1.2
Sex:	Male	0.0	0.1	0.1
	Female	5.9	5.5	2.2
Race:	Black	2.1	1.2	0.4
	White	3.2	3.3	1.4
	Asian	Low N	1.3	0.8
	Hispanic	2.3	2.0	0.8

Table 4.3
Percent of Seniors Who Expect to be in Various Occupations by Sex and Race
(Continued)

		1972	1980	1992
Laborer (5)		2.5	1.9	0.8
Sex:	Male	4.9	3.7	1.4
	Female	0.3	0.2	0.1
Race:	Black	2.1	1.1	0.3
	White	2.5	2.1	0.8
	Asian	Low N	Low N	1.3
	Hispanic	2.3	1.9	0.6
Manager (6)		3.1	7.2	6.0
Sex:	Male	5.1	7.9	6.6
	Female	1.3	6.4	5.4
Race:	Black	3.3	8.3	8.1
	White	3.1	7.0	5.4
	Asian	2.0	11.5	7.2
	Hispanic	3.0	5.2	5.8
Military (7)		2.4	2.0	3.2
Sex:	Male	4.1	3.2	5.6
	Female	0.8	1.0	0.8
Race:	Black	3.7	4.4	6.1
	White	2.3	1.7	2.9
	Asian	Low N	1.9	1.5
	Hispanic	1.4	2.9	2.6
Operative (8)		2.3	2.7	1.2
Sex:	Male	3.9	4.5	2.1
	Female	0.8	1.0	0.2
Race:	Black	2.5	2.8	1.7
	White	2.3	2.6	1.2
	Asian	3.2	1.5	0.6
	Hispanic	1.8	4.3	0.5

Table 4.3
Percent of Seniors Who Expect to be in Various Occupations by Sex and Race (Continued)

		1972	1980	1992
Professional (9)		45.4	44.0	59.0
Sex:	Male	41.8	38.8	49.3
	Female	48.8	48.7	68.7
Race:	Black	40.0	42.6	55.9
	White	46.1	43.9	60.2
	Asian	57.0	54.2	63.2
	Hispanic	38.2	38.9	54.0
Proprietor (10)		1.8	4.0	6.7
Sex:	Male	3.2	5.6	8.7
	Female	0.5	2.5	4.8
Race:	Black	1.2	3.1	7.4
	White	1.9	4.2	6.3
	Asian	Low N	2.0	7.6
	Hispanic	1.6	3.6	8.6
Protective Services (11)		2.2	1.8	4.1
Sex:	Male	4.2	2.8	6.9
	Female	0.4	0.8	1.4
Race:	Black	1.1	1.1	2.4
	White	2.3	1.8	4.3
	Asian	Low N	1.3	4.0
	Hispanic	3.2	2.6	5.6
Sales (12)		3.0	2.1	1.9
Sex:	Male	2.7	2.0	2.2
	Female	3.4	2.2	1.5
Race:	Black	1.9	2.5	2.2
	White	3.1	2.1	1.9
	Asian	Low N	Low N	1.7
	Hispanic	2.0	2.1	1.9

Table 4.3
Percent of Seniors Who Expect to be in Various Occupations by Sex and Race (Continued)

		1972	1980	1992
Service (13)		4.2	3.5	2.6
Sex:	Male	1.6	0.7	0.6
	Female	6.7	6.1	4.6
Race:	Black	2.8	3.8	3.3
	White	4.3	3.5	2.6
	Asian	Low N	3.1	0.7
	Hispanic	4.6	3.8	2.7
Technical (14)		6.6	8.2	6.0
Sex:	Male	8.8	10.5	8.4
	Female	4.6	6.0	3.7
Race:	Black	8.7	10.2	6.0
	White	6.5	7.9	5.7
	Asian	11.0	11.6	6.5
	Hispanic	7.8	9.0	8.4

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Chapter 5. Conclusion

Terms like "equity" and "excellence" often sound like cliches in education rather than measurable goals; while they are discussed often, progress towards either goal is sometimes difficult to discern. Educational policies in the 1960s and 1970s advocated increased educational opportunities for women and minorities. In the 1980s, reformers shifted attention towards the pursuit of excellence, calling for higher standards and curricular reform. Because these goals are so lofty, progress toward them often seems slow, and the efforts toward reaching them difficult to measure in the short term. The three datasets explored here offer the opportunity to look at these issues anew, and examine the course of change over a twenty-year period. From these data, we can see that progress has been made on both fronts.

It is clear that in terms of their academic aspirations, seniors in 1992 were far ahead of their peers in earlier cohorts. A larger percentage of seniors than ever before intend to continue their education in college and graduate school. Furthermore, these seniors are preparing for their future by taking more rigorous sequences of high school coursework, including mathematics and science courses.

Inequities between the sexes were evident in almost all areas of high school life in 1972, including academic achievement and postsecondary goals. In 1972, females lagged behind males in enrollment in college preparatory programs, plans for college, and tested achievement in mathematics, to name just a few. In 1992, these differences disappeared and in some cases, women seniors appeared to hold higher aspirations than men particularly with regard to postsecondary and graduate educational aspirations. The extent to which this move towards equality in the school will translate into equal opportunity and equal pay in the work place can be traced in upcoming rounds of NELS:88.

Some disproportionalities in course completion among racial and ethnic subgroups have been reduced during the past twenty years. In particular, the enrollment of blacks and Hispanic in college preparatory programs has increased significantly since 1972, and the percentage of black, Hispanic, and Asian seniors aspiring to graduate degrees has increased dramatically. Furthermore, gaps between white seniors and seniors of other racial/ethnic groups in 1972 have decreased significantly. However, despite these improvements, some inequalities persist. In particular, a significantly smaller proportion of Hispanics complete the basic coursework sequence in English, Social Studies, Math, and Science recommended by the Commission on Excellence in Education.

Also of concern is the fact that, even though achievement differences among racial and ethnics as a whole have been declining, differences between socio-economic subgroups have widened during the last 20 years. A significantly smaller proportion of seniors from low SES can be found in the upper 15% of the achievement in reading or mathematics. These findings, along with the others reported above, point to goals yet to be met. However, the significant advances which have been made in the past 20 years provide a considerable source of hope for the attainability of these objectives in the future of education in America.

Appendix A:

Supplementary Tables

Table A2.2a
Percentage of High School Graduates Taking Selected Mathematics and Science Courses by Sex: 1982 and 1992

Courses (credits)	1982			1992		
	Total	Male	Female	Total	Male	Female
Mathematics						
Any mathematics (1.00)	99.0	99.4	98.7	99.6	99.3	99.9
Remedial/below grade math (1.00)	32.5	35.9	29.5	17.4	19.5	15.4
Algebra I (1.00)	68.4	66.4	70.4	79.4	80.0	78.9
Algebra II (0.50)	36.9	37.5	36.3	56.1	54.0	58.1
Geometry (1.00)	48.4	48.3	48.5	70.4	69.0	71.7
Trigonometry (0.50)	12.2	13.3	11.2	21.1	21.4	20.8
Analysis/pre-calculus (0.50)	5.8	6.1	5.5	17.2	16.8	17.6
Calculus (1.00)	4.3	4.7	4.0	10.1	10.3	9.8
AP calculus (1.00)	1.4	1.4	1.4	5.5	5.7	5.4
Algebra II and geometry (1.50)	29.1	30.1	28.2	50.1	48.6	51.6
Algebra II, geometry, and trigonometry (2.00)	7.4	8.5	6.3	14.5	14.7	14.4
Algebra II, geometry, trigonometry, and calculus (3.00)	0.8	1.1	0.5	2.7	2.6	2.8
Science						
Any science (1.00)	97.6	97.5	97.7	99.6	99.5	99.7
Biology (1.00)	78.7	76.5	80.6	93.0	91.9	94.2
AP/honors biology (1.00)	6.7	6.2	7.2	5.7	5.8	5.7
Chemistry (1.00)	31.6	32.4	30.9	55.5	54.2	56.8
AP/honors chemistry (1.00)	2.6	3.1	2.1	4.0	4.3	3.7
Physics (1.00)	13.5	17.9	9.4	24.7	28.2	21.4
AP/honors physics (1.00)	0.9	1.2	0.5	2.9	4.0	1.9
Engineering (1.00)	0.1	0.2	0.1	0.3	0.4	0.3
Astronomy (0.50)	0.2	0.3	0.1	0.7	0.9	0.6
Geology (0.50)	11.4	12.7	10.2	18.4	18.8	18.0
Biology and chemistry (2.00)	28.6	28.4	28.9	53.9	52.2	55.6
Biology, chemistry, and physics (3.00)	9.8	12.5	7.4	21.6	24.4	18.9

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Transcript Study, 1987 and 1990 NAEP High School Transcript Studies, National Education Longitudinal Study Transcripts, 1992.

Table A2.2b
Percentage of High School Graduates Taking Selected Mathematics and Science Courses by Race/Ethnicity: 1982 and 1992

Courses (credits)	1982					1992				
	White	Black	Hispanic	Asian	Native Amer.	White	Black	Hispanic	Asian	Native Amer.
Mathematics										
Any mathematics (1.00)	99.1	99.6	98.6	100.0	96.6	99.7	99.1	99.8	100.0	100.0
Remedial/below grade math (1.00)	27.0	54.4	48.5	18.8	52.6	14.6	30.9	24.2	14.5	35.2
Algebra I (1.00)	71.1	61.1	59.9	67.4	54.1	79.6	78.0	84.4	71.9	80.8
Algebra II (0.50)	40.5	26.2	22.5	55.0	20.0	59.2	40.9	46.9	60.8	42.1
Geometry (1.00)	53.9	30.3	29.0	64.3	26.3	72.6	60.4	62.9	77.1	53.6
Trigonometry (0.50)	13.8	6.3	6.8	25.7	7.7	22.5	13.0	15.2	31.3	10.0
Analysis/pre-calculus (0.50)	6.7	2.1	3.0	15.1	0.7	17.9	12.6	10.6	33.9	3.0
Calculus (1.00)	5.0	1.4	1.6	13.1	1.2	10.7	6.9	4.7	20.1	1.4
AP calculus (1.00)	1.7	0.3	0.3	5.9	0.0	5.8	2.5	2.2	16.1	1.3
Algebra II and geometry (1.50)	33.0	17.0	14.4	40.3	13.6	53.1	35.0	41.9	55.5	35.7
Algebra II, geometry, and trigonometry (2.00)	8.5	2.9	4.2	12.9	3.1	15.9	6.8	10.9	18.2	5.9
Algebra II, geometry, trigonometry, and calculus (3.00)	0.9	0.2	0.5	2.0	0.0	3.0	0.9	1.2	5.4	0.6
Science										
Any science (1.00)	97.7	98.6	95.9	97.1	98.4	99.5	100.0	99.7	100.0	100.0
Biology (1.00)	80.1	75.3	73.2	83.5	65.5	93.5	92.2	91.2	93.4	84.5
AP/honors biology (1.00)	7.5	4.5	3.5	13.1	5.1	6.5	3.2	2.4	6.8	5.0
Chemistry (1.00)	34.7	22.5	16.7	51.9	34.1	58.0	45.9	42.6	67.4	32.9
AP/honors chemistry (1.00)	2.9	1.6	1.3	5.8	0.9	4.2	2.3	2.5	9.1	1.8
Physics (1.00)	15.3	6.8	5.5	35.8	6.9	25.9	17.6	15.7	41.6	13.3
AP/honors physics (1.00)	0.9	0.8	0.4	3.5	0.0	2.9	1.4	2.4	9.2	0.6
Engineering (1.00)	0.2	0.2	0.1	0.0	0.0	0.3	0.2	0.1	0.5	0.0
Astronomy (0.50)	0.2	0.2	0.3	0.0	0.0	1.0	0.1	0.1	0.1	0.0
Geology (0.50)	12.0	8.7	9.6	7.9	9.1	19.3	17.6	11.5	16.6	29.7
Biology and chemistry (2.00)	31.6	20.2	15.2	47.2	19.1	56.5	44.2	40.5	65.4	31.2
Biology, chemistry, and physics (3.00)	11.2	4.7	3.7	28.6	4.7	22.6	15.5	12.8	38.2	10.8

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Transcript Study, 1987 and 1990 NAEP High School Transcript Studies, National Education Longitudinal Study Transcripts, 1992.

Table A2.2c
Percentage of High School Graduates Taking Selected Mathematics and Science Courses by Parents' Highest Level of Education: 1982 and 1992

Courses (credits)	1982				1992			
	Didn't finish high school	High school graduate	Some college	College graduate	Didn't finish high school	High school graduate	Some college	College graduate
Mathematics								
Any mathematics (1.00)	98.6	100.0	99.3	99.5	99.8	99.6	99.6	99.6
Remedial/below grade math (1.00)	38.6	34.3	26.5	17.2	19.9	17.2	16.3	17.8
Algebra I (1.00)	65.8	66.6	71.9	74.9	76.9	80.3	79.9	79.4
Algebra II (0.50)	28.1	33.4	44.1	53.1	52.1	55.2	55.8	58.6
Geometry (1.00)	38.9	47.2	56.7	69.1	68.2	69.3	69.8	72.7
Trigonometry (0.50)	7.8	13.0	16.0	20.3	20.1	20.6	21.4	21.9
Analysis/pre-calculus (0.50)	3.2	5.4	7.4	12.5	19.1	15.4	16.0	18.9
Calculus (1.00)	2.1	1.8	5.7	8.0	9.9	9.4	9.7	10.5
AP calculus (1.00)	0.8	0.2	1.9	2.9	7.1	4.9	5.5	5.3
Algebra II and geometry (1.50)	21.0	26.2	35.5	45.1	47.0	49.0	49.8	52.3
Algebra II, geometry, and trigonometry (2.0)	4.0	8.7	10.0	12.3	13.7	14.0	14.7	15.3
Algebra II, geometry, trigonometry, and calculus (3.00)	0.3	0.0	1.3	0.7	2.5	3.0	3.0	2.2
Science								
Any science (1.00)	96.3	98.7	98.5	99.3	99.1	99.7	99.9	99.4
Biology (1.00)	76.1	73.6	82.0	87.0	91.7	93.6	92.5	93.6
AP/honors biology (1.00)	5.4	7.6	7.7	9.3	5.3	6.4	4.3	7.3
Chemistry (1.00)	22.0	25.7	38.2	52.1	53.1	54.3	55.1	57.7
AP/honors chemistry (1.00)	1.8	1.5	2.7	5.6	3.2	3.7	4.7	3.7
Physics (1.00)	8.2	13.1	16.9	23.5	23.4	23.9	23.7	26.7
AP/honors physics (1.00)	0.5	0.4	1.0	1.8	1.7	2.6	3.3	3.2
Engineering (1.00)	0.0	0.0	0.2	0.1	0.3	0.4	0.4	0.2
Astronomy (0.50)	0.1	0.0	0.3	0.2	1.6	1.0	0.6	0.5
Geology (0.50)	12.6	9.7	10.4	10.9	16.0	20.4	18.5	17.6
Biology and chemistry (2.00)	20.1	24.1	34.4	48.0	50.9	53.1	53.6	56.1
Biology, chemistry, and physics (3.00)	5.5	8.0	13.0	17.9	20.5	21.0	21.1	22.7

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Transcript Study, 1987 and 1990 NAEP High School Transcript Studies, National Education Longitudinal Study Transcripts, 1992.

Table A3.4a
Percentage of College-Bound Seniors Expecting to Major in Each Field by Sex

	Male			Female		
	1972	1980	1992	1972	1980	1992
Agriculture	5.8	5.8	3.0	0.6	1.6	0.7
Architecture	3.6	4.5	3.5	0.2	0.7	1.1
Art	2.6	4.5	4.1	5.6	6.5	3.6
Biological Sciences	12.6	3.5	3.7	7.0	2.4	3.7
Business	17.1	22.6	21.8	9.8	26.4	17.8
Communications	2.3	3.6	4.1	1.6	3.8	4.4
Computer Information and Sciences	2.5	6.1	4.0	1.0	4.1	2.1
Education	6.9	3.4	5.9	17.8	8.6	13.9
Engineering	10.5	20.0	17.7	0.2	2.2	2.8
English	1.7	1.8	1.9	4.8	2.5	2.6
Ethnic Studies	0.2	0.1	0.0	0.2	0.1	0.6
Foreign Languages	0.2	0.5	0.3	2.6	1.5	0.9
Health Occupations	4.0	2.5	4.4	20.6	15.4	15.0
Home Economics	0.4	0.2	0.1	0.1	3.7	1.5
Interdisciplinary Studies	0.0	0.1	0.2	3.2	0.1	0.3
Mathematics	2.4	1.1	0.9	1.8	0.8	0.9
Music	3.0	3.0	2.5	3.6	1.8	1.4
Philosophy	1.5	1.0	0.8	1.3	0.3	0.1
Physical Sciences	4.1	2.9	2.3	1.4	1.0	1.4
Pre-Professional[1]	0.0	8.0	10.9	0.0	6.5	11.2
Social Sciences	18.5	5.0	7.9	16.6	10.0	14.0

[1] Category not included in 1972 questionnaire.

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table A3.4b
Percentage of College-Bound Seniors Expecting to Major in Each Field by Race/Ethnicity

	Black			White		
	1972	**1980**	**1992**	**1972**	**1980**	**1992**
Agriculture	0.7	0.7	0.3	3.4	3.9	2.1
Architecture	1.1	2.5	1.3	2.0	2.3	2.1
Art	4.6	6.6	2.5	4.0	5.4	4.0
Biological Sciences	8.1	1.8	1.9	10.0	3.0	4.2
Business	17.5	26.1	22.3	13.1	24.7	18.6
Communications	1.5	4.6	5.4	2.0	3.7	4.3
Computer Information and Sciences	2.6	7.9	7.5	1.6	4.6	2.0
Education	10.8	5.0	6.2	12.6	6.6	11.8
Engineering	3.6	8.8	12.6	5.5	10.0	8.7
English	2.0	1.3	1.2	3.2	2.4	2.6
Ethnic Studies	1.5	0.2	0.0	0.1	0.0	0.4
Foreign Languages	0.7	0.6	0.7	1.3	1.0	0.7
Health Occupations	14.3	11.0	15.0	12.2	9.6	9.6
Home Economics	0.0	2.3	0.5	0.2	2.1	0.9
Interdisciplinary Studies	2.4	0.1	0.2	1.6	0.2	0.2
Mathematics	1.9	1.0	1.0	2.1	1.0	1.0
Music	4.1	2.8	1.4	3.3	2.3	2.2
Philosophy	0.3	0.4	0.0	1.5	0.7	0.5
Physical Sciences	2.4	0.8	1.2	2.8	1.9	2.0
Pre-Professional[1]	0.0	7.5	9.7	0.0	7.1	10.8
Social Sciences	19.9	8.0	9.1	17.5	7.6	11.5

Table A3.4b
Percentage of College-Bound Seniors
Expecting to Major in Each Field by Race/Ethnicity (Continued)

	Asian			Hispanic		
	1972	1980	1992	1972	1980	1992
Agriculture	1.3	1.6	0.1	1.1	3.0	1.8
Architecture	3.2	3.7	1.8	0.8	3.8	3.8
Art	4.6	4.0	3.8	5.2	5.8	4.6
Biological Sciences	15.0	4.3	4.7	6.6	2.4	1.7
Business	11.8	24.2	22.2	18.9	24.9	23.0
Communications	0.7	0.7	4.4	2.1	3.8	3.3
Computer Information and Sciences	3.0	6.6	2.9	2.1	4.0	5.6
Education	12.3	1.4	4.5	12.6	5.7	7.1
Engineering	7.5	17.8	13.6	5.3	11.0	9.5
English	2.8	1.4	1.3	3.9	1.2	1.6
Ethnic Studies	0.0	0.0	0.0	1.4	0.1	0.1
Foreign Languages	1.8	0.7	0.4	4.0	2.2	0.6
Health Occupations	9.3	6.4	10.9	13.6	9.8	8.1
Home Economics	0.0	1.1	0.2	0.9	2.4	1.1
Interdisciplinary Studies	1.0	0.0	0.1	2.1	0.0	0.1
Mathematics	5.4	2.3	0.8	0.8	0.8	0.2
Music	1.8	3.3	1.3	2.4	1.3	0.9
Philosophy	0.3	0.1	0.1	0.4	0.3	0.4
Physical Sciences	4.2	2.3	2.2	0.6	1.7	1.2
Pre-Professional[1]	0.0	11.6	16.2	0.0	6.9	12.2
Social Sciences	13.7	6.5	8.6	15.1	9.1	13.5

[1] Category not included in 1972 questionnaire.

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table A3.4c
Percentages of College-Bound Seniors Expecting to Major in Each Field by Socioeconomic Status

	SESlow			SESmid			SEShigh		
	1972	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**
Agriculture	3.0	4.9	2.4	3.8	3.7	1.9	2.4	2.6	1.4
Architecture	1.4	2.2	2.1	1.8	2.8	2.5	2.2	2.1	2.2
Art	7.2	8.6	7.0	4.4	5.6	4.2	2.8	3.9	3.0
Biological Sciences	3.0	1.9	2.3	7.8	2.0	3.1	14.1	4.1	5.4
Business	19.4	27.3	20.8	15.0	28.4	23.4	9.8	18.7	15.9
Communications	1.3	3.3	3.4	2.2	3.9	3.7	2.0	3.4	4.6
Computer Information and Sciences	2.1	4.3	5.2	2.0	4.8	2.3	1.3	5.6	2.7
Education	15.5	7.4	10.1	14.4	7.4	12.4	9.4	4.5	7.7
Engineering	3.8	5.7	5.6	4.2	7.5	7.5	7.1	15.5	12.4
English	3.1	1.3	0.7	2.8	2.0	1.4	3.7	2.8	3.8
Ethnic Studies	1.3	0.3	0.2	0.1	0.0	0.0	0.2	0.0	0.9
Foreign Languages	1.0	1.3	0.1	1.2	1.0	0.6	1.7	1.0	0.9
Health Occupations	16.7	13.8	14.8	13.7	10.6	11.7	9.6	7.0	6.2
Home Economics	0.3	3.6	2.2	0.3	2.5	1.0	0.2	1.0	0.3
Interdisciplinary Studies	2.1	0.1	0.1	1.9	0.1	0.1	1.2	0.3	0.2
Mathematics	0.3	1.2	0.4	1.3	0.6	0.9	3.5	1.4	1.1
Music	3.6	2.8	2.2	3.2	2.4	2.0	3.5	2.0	1.7
Philosophy	0.4	0.4	0.1	1.3	0.5	0.1	1.9	0.9	0.7
Physical Sciences	1.2	0.5	0.1	1.9	0.9	1.2	4.2	3.6	3.1
Pre-Professional[1]	0.0	2.7	10.2	0.0	5.7	8.8	0.0	11.0	15.2
Social Sciences	13.3	6.4	9.9	16.7	7.7	11.0	19.4	8.6	10.6

[1] Category not included in 1972 questionnaire.

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table A3.4d
Standard Errors (unweighted Ns) for Percentages of College-Bound Seniors Expecting to Major in Each Field by Sex

	Male			Female		
	1972	1980	1992	1972	1980	1992
Agriculture	0.4 (3745)	0.4 (7110)	0.4 (4436)	0.2 (3811)	0.2 (8937)	0.1 (5334)
Architecture	0.4	0.3	0.4	0.1	0.1	0.2
Art	0.2	0.3	0.4	0.4	0.3	0.4
Biological Sciences	0.7	0.3	0.4	0.4	0.2	0.4
Business	0.7	0.6	1.0	0.6	0.5	0.7
Communications	0.3	0.3	0.5	0.2	0.2	0.4
Computer Information and Sciences	0.3	0.3	0.4	0.2	0.3	0.4
Education	0.5	0.3	0.6	0.7	0.4	0.7
Engineering	0.6	0.6	0.8	0.1	0.2	0.3
English	0.2	0.2	0.3	0.4	0.2	0.4
Ethnic Studies	0.1	0.0	0.0	0.1	0.0	0.5
Foreign Languages	0.1	0.1	0.1	0.3	0.2	0.1
Health Occupations	0.4	0.2	0.5	0.8	0.5	0.9
Home Economics	0.1	0.1	0.0	0.0	0.2	0.2
Interdisciplinary Studies	0.0	0.1	0.1	0.3	0.1	0.1
Mathematics	0.3	0.1	0.2	0.2	0.1	0.2
Music	0.3	0.2	0.3	0.3	0.2	0.2
Philosophy	0.2	0.2	0.2	0.2	0.1	0.0
Physical Sciences	0.4	0.2	0.3	0.2	0.1	0.2
Pre-Professional[1]	0.0	0.4	1.0	0.0	0.3	0.6
Social Sciences	0.7	0.4	0.7	0.7	0.4	0.8

[1] Category not included in 1972 questionnaire.

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table A3.4e
Standard Errors (unweighted Ns) for Percentages of College-Bound Seniors Expecting to Major in Each Field by Race/Ethnicity

	Black			White		
	1972	1980	1992	1972	1980	1992
Agriculture	0.3 (695)	0.3 (2053)	0.3 (812)	0.3 (6260)	0.2 (11603)	0.3 (6961)
Architecture	0.4	0.4	0.4	0.2	0.2	0.2
Art	0.9	0.8	0.6	0.3	0.2	0.3
Biological Sciences	1.1	0.3	0.7	0.4	0.2	0.3
Business	1.6	1.2	2.1	0.5	0.5	0.6
Communications	0.6	0.5	1.2	0.2	0.2	0.4
Computer Information and Sciences	0.6	0.8	2.1	0.2	0.2	0.2
Education	1.2	0.6	1.2	0.5	0.3	0.5
Engineering	0.8	0.9	2.1	0.3	0.3	0.4
English	0.6	0.3	0.4	0.2	0.2	0.3
Ethnic Studies	0.5	0.1	0.0	0.0	0.0	0.4
Foreign Languages	0.3	0.2	0.3	0.2	0.1	0.1
Health Occupations	1.6	0.8	2.7	0.5	0.3	0.6
Home Economics	0.0	0.4	0.2	0.1	0.2	0.2
Interdisciplinary Studies	0.6	0.1	0.2	0.2	0.0	0.1
Mathematics	0.5	0.2	0.5	0.2	0.1	0.2
Music	0.9	0.4	0.6	0.2	0.2	0.2
Philosophy	0.2	0.2	0.0	0.2	0.1	0.2
Physical Sciences	0.7	0.2	0.5	0.2	0.2	0.2
Pre-Professional[1]	0.0	0.8	1.3	0.0	0.3	0.8
Social Sciences	1.7	0.8	2.2	0.6	0.3	0.6

Table A3.4e
Standard Errors (unweighted Ns) for Percentages of College-Bound Seniors Expecting to Major in Each Field by Race/Ethnicity (Continued)

	Asian			Hispanic		
	1972	1980	1992	1972	1980	1992
Agriculture	1.3 (130)	0.8 (283)	0.0 (867)	0.6 (279)	0.6 (1742)	0.6 (1018)
Architecture	1.7	1.5	0.6	0.4	0.7	1.1
Art	2.5	1.4	0.9	2.2	0.8	0.8
Biological Sciences	3.4	1.7	1.0	1.8	0.6	0.4
Business	2.6	2.9	2.6	2.7	1.5	2.2
Communications	0.7	0.5	1.8	1.0	0.7	0.8
Computer Information and Sciences	1.4	1.8	0.8	0.9	0.6	1.2
Education	3.6	0.6	1.0	2.3	0.8	1.3
Engineering	2.3	3.2	1.8	1.5	1.3	1.3
English	1.5	0.8	0.4	1.7	0.3	0.5
Ethnic Studies	0.0	0.0	0.0	0.7	0.1	0.1
Foreign Languages	1.1	0.7	0.2	1.5	0.5	0.2
Health Occupations	2.2	1.8	1.7	2.5	1.0	1.0
Home Economics	0.0	0.7	0.1	0.9	0.5	0.4
Interdisciplinary Studies	1.0	0.0	0.1	1.0	0.0	0.1
Mathematics	2.0	1.1	0.4	0.4	0.3	0.1
Music	1.4	1.6	0.6	1.2	0.4	0.2
Philosophy	0.3	0.1	0.1	0.3	0.2	0.2
Physical Sciences	2.1	1.0	0.6	0.4	0.4	0.4
Pre-Professional[1]	0.0	2.2	1.9	0.0	0.9	1.4
Social Sciences	3.4	1.7	1.3	2.2	1.1	1.6

[1] Category not included in 1972 questionnaire.

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table A3.4f
Standard Errors (unweighted Ns) for Percentages of College-Bound Seniors Expecting to Major in Each Field by Socioeconomic Status

	SESlow			**SESmid**			**SEShigh**		
	1972	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**
Agriculture	2.0 (1258)	0.4 (3806)	0.8 (1596)	3.6 (3445)	0.3 (7427)	0.2 (4410)	3.4 (2840)	0.3 (4690)	0.2 (3764)
Architecture	0.5	0.2	0.3	0.2	0.2	0.3	0.3	0.3	0.3
Art	0.6	0.6	0.6	0.4	0.3	0.4	0.4	0.4	0.4
Biological Sciences	0.7	0.3	0.4	0.6	0.2	0.3	0.7	0.3	0.6
Business	1.2	0.9	1.5	0.6	0.6	0.8	0.7	0.7	1.0
Communications	0.5	0.3	0.5	0.2	0.3	0.4	0.3	0.3	0.6
Computer Information and Sciences	0.4	0.4	0.6	0.3	0.3	0.5	0.2	0.3	0.4
Education	1.0	0.5	1.2	0.7	0.3	0.6	0.6	0.4	0.7
Engineering	0.7	0.5	0.8	0.4	0.4	0.7	0.5	0.6	0.7
English	0.6	0.2	0.2	0.3	0.2	0.4	0.4	0.4	0.4
Ethnic Studies	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.8
Foreign Languages	0.3	0.2	0.2	0.2	0.1	0.1	0.3	0.2	0.2
Health Occupations	1.1	0.6	1.7	0.7	0.4	0.8	0.7	0.4	0.6
Home Economics	0.2	0.3	0.5	0.1	0.2	0.2	0.1	0.2	0.2
Interdisciplinary Studies	0.4	0.0	0.2	0.2	0.0	0.0	0.2	0.1	0.1
Mathematics	0.5	0.2	0.2	0.2	0.1	0.2	0.3	0.2	0.2
Music	0.5	0.3	0.5	0.4	0.2	0.3	0.4	0.3	0.3
Philosophy	0.3	0.2	0.0	0.2	0.1	0.1	0.2	0.1	0.3
Physical Sciences	0.4	0.2	0.3	0.4	0.2	0.2	0.4	0.5	0.3
Pre-Professional[1]	0.0	0.4	1.0	0.0	0.3	0.6	0.0	0.5	1.4
Social Sciences	1.3	0.5	0.2	0.7	0.3	0.4	0.9	0.6	0.3

[1] Category not included in 1972 questionnaire.

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Appendix B:

Standard Errors for Percent Estimates Reported in Text

Table B1.3
Standard Errors (unweighted Ns) for Percentages of Seniors by Sex, Race, and Region

	1972	**1980**	**1992**
SEX	(16678)	(26993)	(16114)
Male	0.6 (8281)	0.5 (12907)	0.6 (8034)
Female	0.6 (8397)	0.5 (14086)	0.6 (8080)
RACE/ETHNICITY	(16132)	(27386)	(16041)
Black	0.4 (2127)	0.7 (3775)	0.8 (1499)
White	0.5 (12847)	0.8 (19852)	1.1 (11308)
Asian	0.1 (193)	0.2 (365)	0.3 (1172)
Hispanic	0.3 (776)	0.3 (3177)	0.7 (1909)
REGION	(16683)	(28240)	(16088)
Northeast	0.5 (3618)	1.5 (5689)	0.9 (3148)
Midwest	0.4 (4568)	1.6 (8102)	0.8 (4328)
South	0.4 (5513)	1.6 (9309)	0.8 (5428)
West	0.4 (2984)	1.4 (5140)	0.7 (3274)

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table B1.4
Standard Errors for Percentages of Black, White, Asian, and Hispanic Seniors in Each Quartile of Social Class

	1972	1982	1992
BLACKS	2112	3550	1499
Low SES Quartile	1.4	1.5	2.5
Middle Two SES Quartile	1.2	1.3	2.2
High SES Quartile	0.6	.7	1.1
WHITES	12822	19568	11308
Low SES Quartile	.4	.6	.7
Middle Two SES Quartile	.6	.6	.8
High SES Quartile	.6	.8	1.0
ASIANS	193	359	1172
Low SES Quartile	3.8	3.2	2.4
Middle Two SES Quartile	4.0	3.3	2.6
High SES Quartile	3.2	3.7	2.6
HISPANICS	772	3077	1909
Low SES Quartile	2.8	1.7	2.0
Middle Two SES Quartile	2.5	1.4	1.7
High SES Quartile	1.2	1.0	1.4

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table B1.5a
Standard Errors (unweighted Ns) for Percentages of Seniors Who Believe that Various Values are "Very Important"

	A Good Marriage			Giving Children A Better Opportunity			Living Close to Parents			Friends		
	1972	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**
TOTAL	0.4 (16489)	0.3 (26699)	0.6 (15996)	0.5 (16425)	0.5 (26544)	0.6 (15973)	0.2 (16487)	0.3 (26557)	0.4 (15975)	0.4 (16515)	0.3 (26665)	0.6 (15992)
SEX												
Male	0.5 (8167)	0.5 (12730)	0.5 (7962)	0.6 (8141)	0.6 (12648)	0.8 (7950)	0.3 (8170)	0.3 (12646)	0.6 (7952)	0.5 (8191)	0.4 (12719)	0.7 (7962)
Female	0.5 (8322)	0.4 (13969)	0.7 (8034)	0.7 (8284)	0.6 (13896)	0.8 (8023)	0.3 (8317)	0.4 (13911)	0.6 (8023)	0.5 (8324)	0.4 (13946)	0.8 (8030)
RACE/ETHNICITY												
Black	1.1 (2065)	0.9 (3584)	1.9 (1488)	0.8 (2059)	0.8 (3540)	1.0 (1486)	0.7 (2059)	0.7 (3546)	1.3 (1482)	1.2 (2059)	1.0 (3557)	2.1 (1487)
White	0.4 (12750)	0.3 (19571)	0.7 (11232)	0.6 (12696)	0.5 (19474)	0.7 (11220)	0.2 (12756)	0.3 (19482)	0.5 (11224)	0.4 (12781)	0.3 (19568)	0.6 (11234)
Asian	4.2 (191)	2.4 (357)	1.9 (1164)	3.8 (189)	2.9 (354)	1.8 (1162)	2.5 (191)	2.6 (357)	2.2 (1163)	3.2 (190)	2.3 (357)	1.8 (1163)
Hispanic	1.6 (762)	1.1 (3075)	1.5 (1887)	1.7 (758)	1.1 (3054)	1.1 (1882)	1.6 (760)	1.1 (3052)	1.4 (1883)	2.0 (759)	1.2 (3062)	1.6 (1884)
REGION												
Northeast	0.9 (3579)	0.7 (5575)	1.1 (3120)	1.0 (3566)	1.0 (5534)	1.4 (3118)	0.4 (3581)	0.6 (5552)	1.1 (3116)	0.7 (3585)	0.7 (5569)	1.0 (3121)
Midwest	0.7 (4528)	0.5 (7898)	0.9 (4212)	0.9 (4506)	0.8 (7852)	1.1 (4208)	0.4 (4524)	0.4 (7852)	0.9 (4210)	0.8 (4534)	0.5 (7891)	0.9 (4211)
South	0.5 (5435)	0.6 (9008)	1.1 (5394)	0.7 (5424)	0.7 (8964)	1.1 (5384)	0.4 (5430)	0.4 (8943)	0.8 (5381)	0.7 (5446)	0.7 (8984)	1.1 (5392)
West	0.8 (2952)	0.9 (5005)	1.2 (3246)	1.4 (2934)	1.2 (4961)	1.5 (3239)	0.6 (2957)	0.7 (4975)	0.9 (3244)	0.8 (2955)	0.8 (5000)	1.3 (3244)

Table B1.5a

Standard Errors (unweighted Ns) for Percentages of Seniors Who Believe that Various Values are "Very Important" (Continued)

	A Good Marriage			Giving Children A Better Opportunity			Living Close to Parents			Friends		
	1972	1980	1992	1972	1980	1992	1972	1980	1992	1972	1989	1992
SOCIOECONOMIC STATUS												
Low	0.6 (4757)	0.5 (8177)	1.0 (3849)	0.7 (4746)	0.7 (8116)	0.7 (3837)	0.5 (4740)	0.5 (8108)	0.8 (3837)	0.7 (4752)	0.7 (8149)	1.1 (3846)
Middle	0.5 (7852)	0.4 (12569)	0.8 (7447)	0.6 (7816)	0.6 (12516)	0.8 (7443)	0.3 (7861)	0.4 (12576)	0.6 (7440)	0.5 (7865)	0.4 (12571)	0.8 (7447)
High	0.8 (3829)	0.7 (6087)	1.2 (4700)	1.0 (3810)	0.9 (6048)	1.2 (4693)	0.4 (3832)	0.5 (6064)	0.9 (4698)	0.7 (3845)	0.5 (6085)	0.8 (4699)
HIGH SCHOOL PROGRAM												
General	0.6 (5595)	0.5 (9998)	0.9 (5780)	0.8 (5576)	0.7 (9942)	0.8 (5773)	0.4 (5592)	0.4 (9943)	0.7 (5775)	0.7 (5607)	0.5 (9996)	0.8 (5776)
Academic	0.6 (6755)	0.5 (10384)	0.9 (7640)	0.8 (6726)	0.8 (10311)	1.0 (7632)	0.4 (6761)	0.4 (10343)	0.6 (7631)	0.6 (6774)	0.4 (10368)	0.7 (7639)
Vocational	0.7 (4143)	0.6 (6699)	1.4 (1735)	0.8 (4127)	0.7 (6659)	1.2 (1731)	0.5 (4138)	0.5 (6642)	1.3 (1728)	0.8 (4138)	0.6 (6679)	1.4 (1734)
COMPOSITE TEST QUARTILE												
Low	0.6 (4556)	0.6 (6729)	1.5 (2354)	0.7 (4540)	0.7 (6686)	1.4 (2350)	0.5 (4539)	0.6 (6647)	1.3 (2346)	0.8 (4547)	0.7 (6706)	1.5 (2353)
Middle	0.5 (7676)	0.4 (11711)	0.8 (6514)	0.7 (7644)	0.6 (11645)	0.7 (6506)	0.3 (7677)	0.4 (11658)	0.7 (6509)	0.5 (7695)	0.4 (11695)	0.7 (6512)
High	0.8 (3428)	0.6 (5749)	1.1 (4019)	1.0 (3414)	0.9 (5719)	1.2 (4016)	0.4 (3442)	0.5 (5743)	0.7 (4018)	0.7 (3444)	0.5 (5752)	1.0 (4019)

Source: National Center for Education Statistics. National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table B1.5b
Standard Errors (unweighted Ns) for Percentages of Seniors Who Believe that Various Values are "Very Important"

	Steady Work			Success in Work			Money			Working to Correct Social Problems		
	1972	1980	1992	1972	1980	1992	1972	1980	1992	1972	1980	1992
TOTAL	0.4 (16478)	0.3 (26560)	0.4 (15986)	0.4 (16559)	0.2 (26743)	0.4 (15997)	0.4 (16493)	0.4 (26660)	0.6 (15990)	0.4 (16462)	0.3 (26519)	0.5 (15955)
SEX												
Male	0.5 (8168)	0.4 (12667)	0.6 (7958)	0.5 (8211)	0.4 (12759)	0.5 (7966)	0.6 (8183)	0.5 (12715)	0.9 (7961)	0.5 (8154)	0.4 (12634)	0.6 (7939)
Female	0.6 (8310)	0.4 (13893)	0.6 (8028)	0.5 (8348)	0.3 (13984)	0.6 (8031)	0.4 (8310)	0.5 (13945)	0.9 (8029)	0.6 (8308)	0.4 (13885)	0.8 (8016)
RACE/ETHNICITY												
Black	0.8 (2065)	0.7 (3552)	1.2 (1488)	0.6 (2088)	0.6 (3588)	0.7 (1490)	1.0 (2063)	1.1 (3571)	2.5 (1489)	1.4 (2063)	0.9 (3523)	2.1 (1487)
White	0.5 (12747)	0.3 (19476)	0.5 (11231)	0.4 (12789)	0.3 (19607)	0.5 (11234)	0.4 (12760)	0.4 (19544)	0.7 (11229)	0.4 (12735)	0.3 (19464)	0.5 (11204)
Asian	3.4 (190)	2.5 (357)	1.5 (1162)	3.0 (191)	2.1 (356)	1.1 (1163)	2.9 (191)	3.0 (356)	2.2 (1164)	4.1 (190)	2.3 (355)	1.9 (1161)
Hispanic	1.5 (756)	1.0 (3052)	1.2 (1883)	1.4 (767)	0.9 (3075)	1.0 (1885)	1.7 (757)	1.2 (3069)	1.7 (1885)	2.2 (755)	1.0 (3039)	1.7 (1879)
REGION												
Northeast	1.0 (3583)	0.7 (5547)	0.8 (3118)	0.8 (3592)	0.5 (5587)	0.7 (3121)	0.8 (3579)	1.0 (5572)	1.3 (3121)	0.8 (3574)	0.6 (5541)	1.1 (3118)
Midwest	0.8 (4523)	0.4 (7850)	0.8 (4212)	0.6 (4542)	0.4 (7911)	0.8 (4213)	0.7 (4524)	0.7 (7885)	0.9 (4212)	0.7 (4515)	0.4 (7831)	0.9 (4199)
South	0.7 (5432)	0.5 (8950)	0.9 (5389)	0.5 (5467)	0.4 (9016)	0.7 (5394)	0.6 (5440)	0.7 (8985)	1.2 (5391)	0.7 (5432)	0.5 (8936)	1.0 (5381)
West	1.0 (2945)	0.7 (4984)	0.8 (3243)	1.0 (2963)	0.6 (5018)	0.7 (3245)	0.8 (2955)	0.8 (4998)	1.3 (3243)	0.9 (2945)	0.6 (4962)	1.1 (3233)

Table B1.5b

Standard Errors (unweighted Ns) for Percentages of Seniors Who Believe that Various Values are "Very Important" (Continued)

	Steady Work			Success in Work			Money			Working to Correct Social Problems		
	1972	1980	1992	1972	1980	1992	1972	1980	1992	1972	1980	1992
SOCIOECONOMIC STATUS												
Low	0.6 (4742)	0.5 (8118)	0.7 (3842)	0.6 (4788)	0.5 (8193)	0.6 (3850)	0.6 (4748)	0.7 (8154)	1.1 (3847)	0.8 (4739)	0.5 (8113)	1.1 (3832)
Middle	0.6 (7843)	0.4 (12528)	0.6 (7446)	0.5 (7879)	0.3 (12595)	0.5 (7447)	0.5 (7855)	0.5 (12561)	0.9 (7444)	0.6 (7839)	0.4 (12487)	0.7 (7433)
High	1.0 (3838)	0.6 (6053)	1.0 (4698)	0.7 (3846)	0.5 (6095)	0.9 (4700)	0.8 (3837)	0.7 (6084)	1.1 (4699)	0.8 (3830)	0.5 (6051)	0.9 (4690)
HIGH SCHOOL PROGRAM												
General	0.6 (5584)	0.4 (9944)	0.7 (5774)	0.6 (5627)	0.4 (10024)	0.5 (5775)	0.6 (5599)	0.6 (9989)	0.9 (5775)	0.6 (5584)	0.4 (9915)	0.8 (5762)
Academic	0.7 (6759)	0.5 (10336)	0.7 (7637)	0.5 (6780)	0.4 (10392)	0.7 (7643)	0.6 (6765)	0.6 (10375)	0.9 (7639)	0.6 (6753)	0.4 (10341)	0.8 (7626)
Vocational	0.6 (4140)	0.5 (6653)	1.0 (1733)	0.6 (4156)	0.4 (6712)	0.9 (1736)	0.7 (4133)	0.8 (6675)	1.6 (1733)	0.8 (4128)	0.5 (6618)	1.5 (1730)
COMPOSITE TEST QUARTILE												
Low	0.6 (4540)	0.6 (6669)	1.2 (2350)	0.6 (4583)	0.5 (6745)	0.9 (2356)	0.7 (4548)	0.8 (6701)	1.6 (2354)	0.7 (4533)	0.6 (6639)	1.1 (2342)
Middle	0.6 (7673)	0.4 (11662)	0.5 (6511)	0.5 (7701)	0.3 (11723)	0.5 (6513)	0.5 (7677)	0.4 (11698)	0.8 (6510)	0.6 (7661)	0.4 (11643)	0.7 (6502)
High	1.0 (3439)	0.6 (5734)	1.3 (4019)	0.7 (3443)	0.5 (5756)	1.2 (4020)	0.7 (3440)	0.7 (5749)	1.1 (4019)	0.8 (3438)	0.6 (5736)	1.1 (4017)

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table B2.1
Standard Errors (unweighted Ns) for Percentages of Seniors Reporting Enrollment in General, Academic, and Vocational High School Programs

	General			Academic			Vocational		
	1972	1980	1992	1972	1980	1992	1972	1980	1992
TOTAL	0.5 (16677)	0.7 (26602)	0.7 (15245)	0.6 (16677)	0.8 (26602)	0.8 (15245)	0.5 (16677)	0.6 (26602)	0.4 (15245)
SEX									
Male	0.7 (8281)	0.8 (12724)	0.9 (7563)	0.8 (8281)	0.9 (12724)	1.0 (7563)	0.6 (8281)	0.7 (12724)	0.6 (7563)
Female	0.7 (8396)	0.8 (13878)	0.9 (7682)	0.8 (8396)	0.9 (13878)	1.0 (7682)	0.7 (8396)	0.7 (13878)	0.6 (7682)
RACE/ETHNICITY									
Black	1.8 (2127)	1.3 (3695)	2.0 (1364)	1.7 (2127)	1.4 (3695)	2.0 (1364)	1.8 (2127)	1.3 (3695)	1.4 (1364)
White	0.6 (12846)	0.8 (19618)	0.9 (10835)	0.7 (12846)	0.8 (19618)	0.9 (10835)	0.5 (12846)	0.6 (19618)	0.5 (10835)
Asian	4.2 (193)	4.1 (362)	2.4 (1104)	4.3 (193)	3.9 (362)	2.4 (1104)	2.6 (193)	2.4 (362)	1.8 (1104)
Hispanic	2.3 (776)	1.4 (3107)	2.1 (1737)	2.0 (776)	1.5 (3107)	1.8 (1737)	2.1 (776)	1.4 (3107)	1.2 (1737)
REGION									
Northeast	0.8 (3618)	1.1 (5587)	1.8 (3022)	1.4 (3618)	1.7 (5587)	1.7 (3022)	1.2 (3618)	1.5 (5587)	1.2 (3022)
Midwest	1.1 (4568)	1.2 (8003)	1.4 (4015)	1.1 (4568)	1.2 (8003)	1.4 (4015)	0.9 (4568)	0.9 (8003)	1.0 (4015)
South	1.0 (5513)	1.1 (9142)	1.2 (5132)	1.0 (5513)	1.2 (9142)	1.2 (5132)	1.0 (5513)	1.0 (9142)	0.7 (5132)
West	1.3 (2983)	1.4 (5052)	1.7 (3052)	1.3 (2983)	1.7 (5052)	1.7 (3052)	1.0 (2983)	1.1 (5052)	0.8 (3052)

Table B2.1
Standard Errors (unweighted Ns) for Percentages of Seniors Reporting Enrollment in General, Academic, and Vocational High School Programs (Continued)

	General			Academic			Vocational		
	1972	1980	1992	1972	1980	1992	1972	1980	1992
SOCIOECONOMIC STATUS									
Low	1.0 (4827)	0.9 (8237)	1.2 (3540)	0.8 (4827)	0.7 (8237)	1.0 (3540)	1.0 (4827)	0.9 (8237)	1.1 (3540)
Middle	0.7 (7926)	0.8 (12655)	1.0 (7097)	0.8 (7926)	0.8 (12655)	1.0 (7097)	0.6 (7926)	0.6 (12655)	0.6 (7097)
High	0.9 (3863)	1.0 (6129)	1.3 (4608)	1.0 (3863)	1.2 (6129)	1.3 (4608)	0.5 (3863)	0.5 (6129)	0.4 (4608)
COMPOSITE TEST QUARTILE									
Low	1.0 (4652)	0.9 (6839)	1.7 (2020)	0.8 (4652)	0.6 (6839)	1.6 (2020)	1.0 (4652)	0.9 (6839)	1.4 (2020)
Middle	0.7 (7729)	1.0 (5930)	1.0 (6222)	0.8 (7729)	0.9 (5930)	1.0 (6222)	0.6 (7729)	0.9 (5930)	0.7 (6222)
High	0.8 (3458)	1.0 (5796)	1.2 (3969)	0.8 (3458)	1.1 (5796)	1.2 (3969)	0.4 (3458)	0.8 (5796)	0.3 (3969)

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table B2.2
Standard Errors for Percentages of High School Graduates Earning the Recommended Units in Core Courses: 1982 and 1992

	1982	1992
Total	0.6	1.3
Sex		
Male	0.8	1.8
Female	0.7	1.4
Race/Ethnicity		
White	0.7	1.5
Black	1.3	3.5
Hispanic	0.9	2.4
Asian	2.5	3.6
Urbanicity		
Urban	1.5	2.2
Suburban	0.9	2.1
Rural	1.1	2.0
Control of school		
Public	0.6	1.2
Private	4.3	4.5
Parents' highest education level		
Did not finish high school	0.8	2.8
High school graduate	1.8	2.0
Some college	1.0	1.4
College graduate	1.7	2.5

Source: U.S. Department of Education, National Center for Education Statistics, The 1990 High School Transcript Study Tabulations, 1993 National Education Longitudinal Study Transcripts, 1992.

Table B2.2a
Standard Errors for Estimated Percentages in Table A2.2a

Courses (credits)	1982			1992		
	Total	Male	Female	Total	Male	Female
Mathematics						
Any mathematics (1.00)	0.2	0.2	0.2	0.1	0.2	0.1
Remedial/below grade math (1.00)	1.0	1.3	1.2	0.8	1.2	0.8
Algebra I (1.00)	0.9	1.2	1.1	0.8	1.0	1.0
Algebra II (0.50)	1.0	1.3	1.1	1.1	1.6	1.3
Geometry (1.00)	1.0	1.3	1.2	1.0	1.4	1.2
Trigonometry (0.50)	0.6	0.8	0.8	1.0	1.3	1.1
Analysis/pre-calculus (0.50)	0.5	0.6	0.5	1.0	1.4	1.1
Calculus (1.00)	0.4	0.5	0.5	0.8	1.3	0.7
AP calculus (1.00)	0.2	0.2	0.3	0.3	0.4	0.5
Algebra II and geometry (1.50)	0.9	1.2	1.1	1.2	1.7	1.4
Algebra II, geometry, and trigonometry (2.00)	0.5	0.7	0.6	0.8	1.1	1.0
Algebra II, geometry, trigonometry, and calculus (3.00)	0.1	0.3	0.1	0.2	0.3	0.3
Science						
Any science (1.00)	0.3	0.4	0.3	0.2	0.2	0.2
Biology (1.00)	0.8	1.1	1.0	0.5	0.7	0.6
AP/honors biology (1.00)	0.5	0.6	0.7	0.7	1.2	0.5
Chemistry (1.00)	0.8	1.1	1.0	1.1	1.6	1.3
AP/honors chemistry (1.00)	0.3	0.4	0.3	0.3	0.4	0.4
Physics (1.00)	0.6	0.9	0.6	1.0	1.6	1.0
AP/honors physics (1.00)	0.1	0.2	0.2	0.3	0.4	0.3
Engineering (1.00)	0.0	0.1	0.0	0.1	0.1	0.1
Astronomy (0.50)	0.1	0.1	0.1	0.4	0.5	0.3
Geology (0.50)	1.0	1.2	1.0	1.1	1.3	1.2
Biology and chemistry (2.0)	0.8	1.1	1.0	1.1	1.6	1.4
Biology, chemistry, and physics (3.00)	0.5	0.7	0.6	1.0	1.6	1.0

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Transcript Study, 1987 and 1990 NAEP High School Transcript Studies, National Education Longitudinal Study Transcripts, 1992.

Table B2.2b
Standard Errors for Estimated Percentages in Table A2.2b

Courses (credits)	1982 White	1982 Black	1982 Hispanic	1982 Asian	1982 Native Amer.	1992 White	1992 Black	1992 Hispanic	1992 Asian	1992 Native Amer.
Mathematics										
Any mathematics (1.00)	0.2	0.2	0.4	0.0	2.1	0.1	0.5	0.2	0.0	0.0
Remedial/below grade math (1.00)	1.1	2.2	1.9	3.2	10.2	0.9	3.1	2.2	2.4	6.0
Algebra I (1.00)	1.0	2.0	1.7	3.9	8.8	0.9	2.5	1.9	2.5	4.3
Algebra II (0.50)	1.1	2.1	1.5	4.6	5.2	1.3	3.1	2.9	3.6	5.6
Geometry (1.00)	1.1	1.8	1.6	4.1	6.2	1.1	3.2	2.5	3.0	5.8
Trigonometry (0.50)	0.8	0.9	0.9	3.1	2.4	1.1	1.9	2.1	3.3	2.9
Analysis/pre-calculus (0.50)	0.6	0.5	0.7	2.7	0.7	1.2	2.5	1.1	3.4	1.5
Calculus (1.00)	0.5	0.4	0.3	2.3	0.9	1.0	1.9	0.9	2.2	0.9
AP calculus (1.00)	0.3	0.1	0.1	1.5	0.0	0.4	0.6	0.4	2.1	0.9
Algebra II and geometry (1.50)	1.1	1.4	1.2	3.8	4.0	1.4	2.9	2.9	3.7	5.4
Algebra II, geometry, and trigonometry (2.00)	0.6	0.5	0.8	2.3	1.5	1.0	1.0	1.8	2.5	2.1
Algebra II, geometry, trigonometry, and calculus (3.00)	0.2	0.1	0.2	1.0	0.0	0.3	0.3	0.4	1.0	0.6
Science										
Any science (1.00)	0.3	0.4	0.7	1.1	0.9	0.2	0.0	0.3	0.0	0.0
Biology (1.00)	0.9	2.1	1.8	2.8	9.6	0.5	1.9	1.5	1.4	4.0
AP/honors biology (1.00)	0.7	0.9	0.7	2.7	2.2	0.9	0.9	0.5	1.0	3.4
Chemistry (1.00)	1.0	1.8	1.2	4.1	9.6	1.3	3.0	2.6	3.4	5.4
AP/honors chemistry (1.00)	0.4	0.5	0.4	1.7	0.6	0.4	0.9	0.7	1.5	1.3
Physics (1.00)	0.7	0.8	0.7	3.9	2.3	1.3	2.6	1.8	3.4	4.0
AP/honors physics (1.00)	0.2	0.4	0.2	1.1	0.0	0.3	0.5	1.0	1.7	0.6
Engineering (1.00)	0.1	0.2	0.1	0.0	0.0	0.1	0.1	0.1	0.3	0.0
Astronomy (0.50)	0.1	0.1	0.2	0.0	0.0	0.5	0.1	0.1	0.0	0.0
Geology (0.50)	1.1	1.9	1.4	2.9	3.5	1.3	3.0	1.7	3.0	6.6
Biology and chemistry (2.0)	1.0	1.7	1.2	3.8	4.7	1.3	3.0	2.6	3.4	5.3
Biology, chemistry, and physics (3.00)	0.6	0.7	0.5	3.7	1.8	1.2	2.6	1.4	3.2	3.9

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Transcript Study, 1987 and 1990 NAEP High School Transcript Studies, National Education Longitudinal Study Transcripts, 1992.

Table B2.2c
Standard Error for Estimated Percentages in Table A2.2c

Courses (credits)	1982 Didn't finish high school	1982 High school graduate	1982 Some college	1982 College graduate	1992 Didn't finish high school	1992 High school graduate	1992 Some college	1992 College graduate
Mathematics								
Any mathematics (1.00)	0.3	0.0	0.2	0.3	0.1	0.2	0.2	0.2
Remedial/below grade math (1.00)	1.6	3.7	1.4	1.7	2.3	1.2	0.9	1.7
Algebra I (1.00)	1.5	3.6	1.3	1.9	2.5	1.3	1.0	1.4
Algebra II (0.50)	1.4	3.2	1.5	2.2	2.8	1.9	1.4	2.2
Geometry (1.00)	1.4	3.5	1.4	2.0	2.6	1.8	1.3	1.7
Trigonometry (0.50)	0.8	2.0	1.0	1.8	1.9	1.5	1.2	1.8
Analysis/pre-calculus (0.50)	0.5	1.3	0.7	1.5	2.5	1.2	1.0	2.3
Calculus (1.00)	0.4	0.8	0.6	1.1	1.7	0.9	0.7	2.2
AP calculus (1.00)	0.4	0.1	0.4	0.6	1.5	0.5	0.4	0.5
Algebra II and geometry (1.50)	1.2	2.9	1.4	2.2	2.8	2.0	1.4	2.4
Algebra II, geometry, and trigonometry (2.0)	0.5	1.8	0.8	1.5	1.6	1.3	1.0	1.7
Algebra II, geometry, trigonometry, and calculus (3.00)	0.1	0.0	0.3	0.3	0.5	0.5	0.3	0.3
Science								
Any science (1.00)	0.7	0.7	0.3	0.3	0.7	0.2	0.1	0.4
Biology (1.00)	1.4	3.2	1.2	1.3	1.3	0.8	0.7	0.8
AP/honors biology (1.00)	0.8	1.6	0.8	1.2	0.7	0.9	0.5	1.9
Chemistry (1.00)	1.2	2.8	1.3	2.1	2.8	1.9	1.3	2.3
AP/honors chemistry (1.00)	0.4	0.8	0.4	1.1	0.5	0.6	0.5	0.5
Physics (1.00)	0.7	2.3	1.0	1.6	2.3	1.3	1.0	2.6
AP/honors physics (1.00)	0.2	0.4	0.2	0.5	0.4	0.5	0.4	0.5
Engineering (1.00)	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Astronomy (0.50)	0.0	0.0	0.1	0.2	1.1	0.5	0.5	0.3
Geology (0.50)	1.4	2.2	1.1	1.5	1.8	1.7	1.4	1.6
Biology and chemistry (2.00)	1.2	2.7	1.3	2.2	2.8	1.9	1.3	2.3
Biology, chemistry, and physics (3.00)	0.6	1.6	0.8	1.5	2.2	1.3	1.0	2.6

Source: U.S. Department of Education, National Center for Education Statistics, High School and Beyond Transcript Study, 1987 and 1990 NAEP High School Transcript Studies, National Education Longitudinal Study Transcripts, 1992.

Table B2.3
Data for the Computations Reported in Table 2.3

	NLS 1972						HS&B 1980						NELS 1992					
Reading Test	Mean	sd	WTD N	N	pooled s	effect	Mean	sd	WTD N	N	pooled s	effect	Mean	sd	WTD N	N	pooled s	effect
Total	9.89	5.0	2863482	15713			8.84	5.1	2658958	24864			33.18	10.1	1966470	12877		
Male	9.83	5.0	1427414	7811			8.95	5.3	1215335	11352			32.01	10.4	1001897	6420		
Female	9.95	5.0	1435051	7897	5.00	0.02	8.96	5.0	1352068	12614	5.14	0.00	34.40	9.7	964574	6457	10.06	0.24
Low SES	7.65	5.0	695440	4503			6.73	4.7	705500	7350			28.25	9.5	491699	3128		
Mid SES	9.92	4.8	1461882	7489	4.87	0.47	9.05	4.9	1264873	11438	4.83	0.48	33.26	9.8	977999	6121	9.70	0.52
High SES	12.13	4.5	695829	3664	4.76	0.94	11.20	4.8	626850	5448	4.75	0.94	38.13	8.9	488384	3580	9.21	1.07
White	10.56	4.8	2384253	12180			9.60	5.0	2105217	17818			34.66	9.8	1440937	9157		
Black	5.94	4.5	235572	1935	4.77	0.97	5.56	4.5	283823	3157	4.94	0.82	27.47	9.4	226273	1183	9.75	0.74
Asian	10.14	5.2	25667	182	4.80	0.09	9.11	5.0	33695	320	5.00	0.10	33.77	10.7	85085	899	9.85	0.09
Am. Indian	6.51	4.9	29787	181	4.80	0.84	7.11	4.8	20103	199	5.00	0.50	28.34	9.8	17663	118	9.80	0.64
Mexican	6.28	4.6	68498	517	4.79	0.89	5.60	4.4	83914	1620	4.98	0.80	28.68	9.1	113652	946	9.75	0.61
Puerto Rican	6.11	4.7	8376	84	4.80	0.93	5.68	4.3	14047	261	5.00	0.78	30.23	9.0	18540	122	9.79	0.45
Other Hisp.	6.68	4.8	17498	112	4.80	0.81	5.73	4.7	57027	853	4.99	0.78	30.43	10.7	52436	385	9.83	0.43
Public	9.78	5.0	2543636	14114			8.66	5.1	2391769	21618			32.75	10.1	1773224	11033		
Private	11.41	5.1	16235	66	5.00	0.33	11.31	5.2	84636	734	5.10	0.52	37.32	10.2	75414	1074	10.10	0.45
Catholic	11.61	4.4	224161	989	4.95	0.37	10.06	4.7	182553	2512	5.07	0.28	37.01	8.5	117653	769	10.01	0.43
Northeast	10.55	4.9	777802	3493			9.57	5.0	605302	4974			34.65	9.8	391149	2435		
N. Central	9.97	4.9	833505	4100	4.90	0.12	9.21	5.0	783970	7292	5.00	0.07	33.79	9.9	525161	3482	9.86	0.09
South	9.14	5.2	773939	5338	5.05	0.28	7.83	5.2	806228	8199	5.12	0.34	31.79	10.2	690414	4505	10.06	0.28
West	9.88	5.1	478236	2782	4.98	0.13	9.01	5.1	463458	4399	5.04	0.11	33.38	10.2	359567	2454	9.99	0.13
General	8.48	4.8	901464	5310	4.57	0.77	7.71	4.8	974753	9041	4.75	0.76	30.94	9.6	701071	4417	9.22	0.70
Academic	11.99	4.4	1323908	6486			11.33	4.7	1006476	9439			37.38	8.9	871554	6086		
Vocational	7.51	4.7	637808	3916	4.50	1.00	6.81	4.7	641041	6035	4.70	0.96	27.80	9.1	236472	1432	8.94	1.07
Urban	9.46	5.0	703504	4099			8.21	5.2	511844	5511			33.52	10.3	520436	3621		
Suburban	10.49	4.9	1481264	7649	4.93	0.21	9.29	5.1	1298837	11863	5.13	0.21	33.76	10.1	794914	4997	10.18	0.02
Rural	9.27	5.1	612151	3541	5.05	0.04	8.52	5.2	848277	7490	5.20	0.06	32.19	9.9	648832	4245	10.08	0.13

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table B2.4
Data for the Computations Reported in Table 2.4

	NLS 1972						HS&B 1980						NELS 1992					
Mathematics Test	Mean	sd	WTD N	N	Pooled	effect	Mean	sd	WTD N	N	Pooled	effect	Mean	sd	WTD N	N	pooled sd	effect
Total	12.94	7.3	2862252	15705			11.90	7.2	2650446	24758			48.84	14.2	1967552	12888		
Male	13.79	7.3	1426314	7807			12.83	7.4	1213609	11321			49.39	14.5	1002841	6428		
Female	12.09	7.2	1434921	7893	7.25	0.23	11.39	6.9	1346152	12549	7.14	0.20	48.28	13.8	964711	6460	14.16	0.08
Low SES	9.39	7.1	694282	4493			8.44	6.6	701703	7303			40.68	12.6	492999	3136		
Mid SES	12.90	7.0	1461863	7490	7.03	0.50	12.16	6.8	1263636	11410	6.73	0.55	48.76	13.3	977259	6117	13.07	0.62
High SES	16.62	6.3	696135	3656	6.71	1.08	15.83	6.4	624635	5428	6.51	1.14	57.37	12.2	488489	3585	12.40	1.35
White	13.95	6.9	2384219	12179			12.98	6.9	2099886	17756			51.01	13.6	1441551	9164		
Black	6.50	6.2	235045	1931	6.84	1.09	6.69	6.3	284281	3153	6.83	0.92	39.24	12.5	226158	1183	13.46	0.87
Asian	15.96	6.7	25667	182	6.90	0.29	15.50	7.2	33116	317	6.90	0.36	53.27	14.5	85507	902	13.65	0.17
Am. Indian	7.74	6.4	29787	181	6.89	0.90	8.28	6.5	20013	198	6.90	0.68	40.89	13.0	17663	118	13.59	0.74
Mexican	8.02	6.8	68165	514	6.90	0.86	7.54	6.8	82650	1610	6.90	0.79	41.52	12.4	113486	946	13.52	0.70
Puerto Rican	6.33	6.2	8376	84	6.90	1.10	7.19	7.5	13898	256	6.90	0.84	43.13	13.7	18540	122	13.60	0.58
Other Hisp.	8.04	5.9	17461	112	6.89	0.86	8.08	6.8	55699	839	6.90	0.71	45.81	14.3	52383	385	13.63	0.38
Public	12.79	7.3	2542234	14105			11.59	7.2	2383107	21503			48.19	14.2	1774377	11041		
Private	15.50	6.0	16235	66	7.29	0.37	15.48	6.9	84822	735	7.19	0.54	55.77	13.6	75343	1077	14.18	0.53
Catholic	15.36	6.4	224332	990	7.23	0.36	14.35	6.2	182516	2520	7.13	0.39	54.30	12.1	117653	769	14.08	0.43
Northeast	13.90	7.1	778067	3494			13.36	7.2	604620	4955			51.73	13.9	391149	2439		
N. Central	13.29	7.1	833316	4099	7.10	0.09	12.59	7.0	783062	7277	7.09	0.11	50.14	13.9	525669	3484	13.90	0.11
South	11.95	7.4	773173	5332	7.25	0.27	10.07	7.1	805015	8171	7.14	0.46	46.53	14.0	689932	4506	13.96	0.37
West	12.37	7.4	477695	2780	7.22	0.21	12.04	7.1	457749	4355	7.16	0.18	48.27	14.5	360623	2458	14.19	0.24
General	10.41	6.8	900844	5303	6.45	0.97	9.89	6.5	969228	8988	6.35	0.99	44.79	13.2	701436	4419	12.50	0.90
Academic	16.66	6.2	1323927	6487			16.17	6.2	1007295	9433			55.99	11.9	871995	6093		
Vocational	8.78	6.2	637177	3914	6.20	1.27	8.48	6.2	637325	5990	6.20	1.24	39.90	11.8	236246	1431	11.88	1.35
Urban	12.16	7.3	703168	4097			10.98	7.4	509127	5466			48.72	14.6	520562	3625		
Suburban	13.81	7.2	1481125	7648	7.23	0.23	12.70	7.1	1295212	11820	7.19	0.24	50.01	14.1	795246	5000	14.30	0.09
Rural	12.15	7.3	611858	3538	7.30	0.00	11.24	7.1	846107	7472	7.21	0.04	47.49	13.9	649457	4249	14.22	0.09

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table B2.5
Standard Errors for Percentages of 1972 and 1992 High School Seniors From Sex and Race/Ethnicity Subgroups' High and Low Ends (approx. 15%) of the Distribution of Reading and Math Proficiency

	Reading				Math			
	Low		High		Low		High	
	1972	1992	1972	1992	1972	1992	1972	1992
Total SE	.35	.52	.41	.59	.33	.54	.40	.61
Unweighted N	2837	1740	2859	2605	2784	1673	2787	2605
Sex								
Male	.45	.81	.49	.71	.41	.75	.57	.85
Female	.44	.54	.56	.88	.47	.59	.50	.74
Race/Ethnicity								
Black	1.46	1.79	.53	.75	1.50	2.44	.48	.79
White	.32	.57	.46	.72	.31	.45	.46	.72
Asian	2.58	2.04	3.28	1.94	2.38	2.02	3.29	2.44
Hisp.	1.77	1.54	.82	.98	1.87	1.41	.76	.98
Socioeconomic Status								
Low	.73	1.04	.52	.50	.77	1.05	.52	.43
Middle	.44	.57	.50	.76	.41	.70	.49	.62
High	.42	1.13	.90	1.32	.40	.46	.90	1.41

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table B2.6a
Standard Errors (unweighted Ns) for Percentages of Seniors Reporting Participation in Extracurricular Activities

	Student Government			Honorary Societies			Subject Matter Clubs			Music, Drama, Debate		
	1972	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**
TOTAL	0.4 (16159)	0.4 (26288)	0.5 (14944)	0.4 (16231)	0.4 (26340)	0.5 (14925)	0.5 (16242)	0.5 (26414)	0.6 (14961)	0.5 (16197)	0.5 (26569)	0.6 (15000)
SEX												
Male	0.5 (8012)	0.5 (12497)	0.6 (7382)	0.4 (8030)	0.4 (12530)	0.6 (7372)	0.6 (8037)	0.5 (12570)	0.8 (7386)	0.6 (7987)	0.6 (12645)	0.8 (7403)
Female	0.6 (8147)	0.5 (13791)	0.7 (7562)	0.6 (8201)	0.5 (13810)	0.8 (7553)	0.7 (8205)	0.6 (13844)	0.8 (7575)	0.7 (8210)	0.6 (13924)	0.8 (7597)
RACE/ETHNICITY												
Black	1.2 (1956)	0.9 (3544)	2.1 (1387)	0.8 (1981)	0.8 (3546)	1.8 (1386)	1.3 (1997)	1.2 (3563)	1.6 (1389)	1.4 (1999)	1.2 (3621)	1.7 (1393)
White	0.5 (12573)	0.4 (19393)	0.5 (10497)	0.4 (12606)	0.4 (19434)	0.6 (10489)	0.6 (12605)	0.5 (19466)	0.7 (10510)	0.6 (12566)	0.6 (19556)	0.7 (10538)
Asian	3.5 (191)	3.4 (350)	1.5 (1089)	3.8 (189)	2.6 (353)	2.1 (1090)	4.1 (191)	3.1 (355)	2.3 (1094)	3.3 (189)	3.9 (357)	1.9 (1093)
Hispanic	1.5 (733)	1.0 (3043)	1.7 (1766)	1.2 (744)	0.9 (3051)	1.2 (1756)	1.9 (741)	1.2 (3067)	1.5 (1762)	2.0 (738)	1.3 (3088)	1.4 (1770)
REGION												
Northeast	0.8 (3530)	0.8 (5505)	0.9 (2907)	0.8 (3535)	0.7 (5507)	1.2 (2904)	1.1 (3533)	0.8 (5525)	1.1 (2919)	1.1 (3525)	1.1 (5558)	1.4 (2926)
Midwest	0.8 (4451)	0.6 (7879)	0.9 (3997)	0.6 (4449)	0.6 (7889)	0.9 (3991)	1.1 (4466)	0.8 (7901)	1.2 (3995)	1.0 (4449)	0.9 (7939)	1.2 (4005)
South	0.7 (5275)	0.6 (8926)	1.0 (4965)	0.8 (5327)	0.7 (8961)	1.1 (4954)	0.9 (5330)	0.9 (8993)	1.1 (4963)	0.8 (5319)	0.8 (9062)	1.0 (4978)
West	1.1 (2907)	1.0 (4979)	1.3 (3060)	0.9 (2924)	0.8 (4982)	1.1 (3061)	0.9 (2917)	0.8 (5002)	1.1 (3069)	1.1 (2909)	1.1 (5037)	1.4 (3076)

Table B2.6a
Standard Errors (unweighted Ns) for Percentages of Seniors Reporting Participation in Extracurricular Activities
(Continued)

	Student Government			Honorary Societies			Subject Matter Clubs			Music, Drama, Debate		
	1972	1980	1992	1972	1980	1992	1972	1980	1992	1972	1980	1992
SOCIOECONOMIC STATUS												
Low	0.6 (4610)	0.5 (8112)	0.7 (3611)	0.5 (4639)	0.5 (8124)	0.7 (3600)	0.8 (4641)	0.7 (8165)	0.9 (3612)	0.8 (4639)	0.8 (8221)	1.0 (3621)
Middle	0.6 (7695)	0.5 (12468)	0.8 (7010)	(0.5) (7733)	0.5 (12514)	0.7 (7009)	0.7 (7742)	0.6 (12517)	0.8 (7024)	0.7 (7703)	0.6 (12598)	0.8 (7035)
High	0.9 (3801)	0.8 (6032)	0.9 (4323)	0.8 (3806)	0.8 (6024)	1.3 (4316)	0.9 (3805)	0.9 (6054)	1.2 (4325)	1.0 (3802)	1.0 (6081)	1.2 (4344)
HIGH SCHOOL PROGRAM												
General	0.6 (5493)	0.5 (9950)	0.6 (5312)	0.4 (5518)	0.4 (9979)	0.6 (5307)	0.6 (5521)	0.6 (10008)	0.8 (5311)	0.8 (5506)	0.7 (10061)	0.9 (5329)
Academic	0.7 (6658)	0.6 (10313)	0.9 (7199)	0.7 (6666)	0.7 (10315)	0.9 (7197)	0.8 (6670)	0.7 (10330)	1.0 (7218)	0.8 (6646)	0.8 (10398)	0.9 (7235)
Vocational	0.6 (4011)	0.5 (6637)	0.8 (1635)	0.5 (4050)	0.5 (6658)	0.7 (1627)	0.9 (4054)	0.7 (6686)	1.2 (1634)	0.7 (4049)	0.7 (6738)	1.2 (1637)
COMPOSITE TEST QUARTILE												
Low	0.6 (4378)	0.5 (6647)	0.9 (2284)	0.4 (4407)	0.4 (6673)	0.7 (2283)	0.8 (4426)	0.7 (6719)	1.5 (2284)	0.8 (4411)	0.8 (6768)	1.1 (2294)
Middle	0.5 (7551)	0.5 (11640)	0.7 (6430)	0.5 (7594)	0.4 (11656)	0.6 (6419)	0.7 (7589)	0.6 (11664)	0.8 (6438)	0.7 (7558)	0.6 (11734)	0.8 (6453)
High	0.9 (3422)	0.8 (5722)	1.0 (3984)	1.1 (3422)	1.0 (5734)	1.3 (3980)	1.0 (3415)	0.9 (5740)	1.2 (3990)	1.0 (3419)	0.9 (5758)	1.3 (3998)

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table B2.6b
Standard Errors (unweighted Ns) for Percentages of Seniors Reporting Participation in Extracurricular Activities

	Athletics			Cheerleading			Newspaper or Yearbook			Vocational Clubs		
	1972	1980	1992	1972	1980	1992	1972	1980	1992	1972	1980	1992
TOTAL	0.6 (16448)	0.5 (26723)	0.7 (15088)	0.4 (16243)	0.4 (26391)	0.3 (14596)	0.5 (16229)	0.5 (26320)	0.6 (14929)	0.5 (16310)	0.7 (26472)	0.6 (14952)
SEX												
Male	0.7 (8186)	0.6 (12774)	(0.9) (7461)	0.4 (7985)	0.3 (12522)	0.2 (7116)	0.6 (8023)	0.5 (12528)	0.8 (7371)	0.6 (8064)	0.8 (12589)	0.7 (7375)
Female	0.7 (8262)	0.6 (13949)	0.8 (7627)	0.8 (8258)	0.6 (13869)	0.6 (7480)	0.7 (8206)	0.7 (13792)	0.8 (7558)	0.8 (8246)	0.9 (13883)	0.8 (7577)
RACE/ETHNICITY												
Black	1.4 (2058)	1.1 (3669)	2.2 (1405)	1.1 (1991)	0.9 (3576)	1.6 (1346)	1.1 (1996)	0.9 (3546)	1.5 (1381)	1.6 (2014)	1.6 (3581)	1.7 (1388)
White	0.6 (12718)	0.6 (19646)	0.8 (10582)	0.5 (12609)	0.4 (19447)	0.3 (10246)	(0.6 (12600)	0.6 (19414)	0.7 (10494)	0.6 (12650)	0.8 (19502)	0.7 (10506)
Asian	3.8 (190)	3.6 (358)	2.3 (1105)	3.0 (190)	2.3 (355)	0.9 (1074)	3.1 (191)	2.8 (353)	1.6 (1087)	2.8 (192)	2.4 (353)	1.3 (1094)
Hispanic	2.1 (760)	1.4 (3119)	1.7 (1790)	1.5 (745)	0.9 (3055)	0.9 (1728)	1.5 (735)	1.1 (3053)	1.5 (1762)	2.5 (743)	1.6 (3079)	1.4 (1759)
REGION												
Northeast	1.1 (3582)	1.2 (5608)	1.4 (2947)	0.8 (3517)	0.6 (5504)	0.7 (2832)	1.2 (3527)	1.1 (5503)	1.6 (2908)	1.1 (3546)	0.8 (5525)	0.9 (2913)
Midwest	1.1 (4518)	0.8 (7976)	1.3 (4013)	0.9 (4467)	0.7 (7902)	0.6 (3889)	1.0 (4450)	0.8 (7879)	1.1 (3995)	1.0 (4469)	1.2 (7915)	1.4 (3995)
South	0.9 (5402)	0.9 (9130)	1.2 (5015)	0.9 (5333)	0.8 (9002)	0.7 (4863)	0.8 (5332)	0.9 (8962)	0.9 (4948)	1.1 (5372)	1.4 (9036)	1.1 (4963)
West	1.3 (2951)	1.3 (5065)	1.4 (3097)	0.8 (2930)	0.7 (4989)	0.6 (2996)	1.0 (2924)	1.1 (4983)	1.1 (3063)	1.0 (2927)	1.3 (5005)	0.8 (3066)

Table B2.6b
Standard Errors (unweighted Ns) for Percentages of Seniors Reporting Participation in Extracurricular Activities (Continued)

	Athletics			Cheerleading			Newspaper or Yearbook			Vocational Clubs		
	1972	1980	1992	1972	1980	1992	1972	1980	1992	1972	1980	1992
SOCIOECONOMIC STATUS												
Low	0.8 (4731)	0.7 (8281)	1.2 (3653)	0.7 (4651)	0.5 (8168)	0.8 (3547)	0.7 (4638)	0.7 (8127)	0.8 (3602)	0.9 (4684)	1.0 (8181)	1.2 (3610)
Middle	0.8 (7831)	0.6 (12654)	0.9 (7074)	0.6 (7738)	0.5 (12519)	0.4 (6861)	0.7 (7742)	0.6 (12498)	0.7 (7010)	0.7 (7759)	0.8 (12559)	0.8 (7017)
High	1.0 (3830)	1.0 (6124)	1.2 (4361)	0.7 (3800)	0.6 (6034)	0.6 (4188)	0.9 (3796)	1.0 (6028)	1.5 (4317)	0.7 (3813)	0.8 (6054)	0.6 (4325)
HIGH SCHOOL PROGRAM												
General	0.8 (5591)	0.7 (10142)	1.0 (5358)	0.7 (5515)	0.6 (9990)	0.6 (5180)	0.7 (5512)	0.7 (9972)	0.8 (5306)	0.8 (5546)	0.9 (10026)	0.8 (5307)
Academic	0.8 (6744)	0.8 (10449)	1.0 (7271)	0.6 (6670)	0.6 (10333)	0.5 (7049)	0.8 (6665)	0.8 (10299)	1.0 (7198)	0.6 (6679)	0.6 (10344)	(0.6 (7209)
Vocational	1.0 (4117)	0.8 (6782)	1.6 (1649)	0.8 (4061)	0.5 (6682)	0.6 (1599)	0.8 (4055)	0.6 (6662)	1.1 (1633)	1.1 (4088)	1.2 (6718)	1.8 (1640)
COMPOSITE TEST QUARTILE												
Low	0.9 (4526)	0.8 (6845)	1.6 (2324)	0.7 (4421)	0.6 (6703)	0.8 (2202)	0.8 (4410)	0.6 (6673)	1.0 (2280)	0.9 (4467)	1.0 (6736)	1.4 (2287)
Middle	0.7 (7655)	0.8 (5961)	0.9 (6477)	0.6 (7586)	0.5 (11664)	0.5 (6294)	0.7 (7585)	0.6 (11640)	0.7 (6424)	0.7 (7603)	0.9 (11689)	0.8 (6432)
High	1.0 (3441)	0.9 (5816)	1.3 (4001)	0.8 (3422)	0.6 (5732)	0.6 (3885)	1.0 (3419)	1.0 (5719)	1.3 (3979)	0.7 (3422)	0.8 (5741)	0.8 (3987)

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table B3.1
Standard Errors (unweighted Ns) for Percentages of Seniors Planning to Work in Year Following High School Graduation

	1972	1980	1992
TOTAL	0.5 (16588)	0.6 (26464)	0.5 (14859)
SEX			
Male	0.7 (8235)	0.8 (12615)	0.7 (7080)
Female	0.6 (8353)	0.6 (13849)	0.6 (7779)
RACE/ETHNICITY			
Black	1.4 (2115)	1.2 (3638)	1.2 (1299)
White	0.5 (12782)	0.6 (19538)	0.6 (10566)
Asian	3.9 (191)	2.1 (360)	2.2 (1096)
Hispanic	2.0 (771)	1.5 (3101)	1.3 (1699)
REGION			
Northeast	1.0 (3604)	1.3 (5520)	1.1 (2951)
Midwest	0.8 (4546)	0.9 (7893)	0.8 (3946)
South	0.8 (5485)	0.9 (9057)	0.9 (4895)
West	1.0 (2958)	1.2 (4963)	1.0 (3045)

Table B3.1
Standard Errors (unweighted Ns) for Percentages of Seniors Planning to Work in Year Following High School Graduation
(Continued)

	1972	1980	1992
SOCIOECONOMIC STATUS			
Low	0.9 (4809)	0.8 (8184)	1.1 (3400)
Middle	0.6 (7885)	0.6 (12557)	0.6 (6938)
High	0.6 (3835)	0.7 (6078)	0.5 (4521)
HIGH SCHOOL PROGRAM			
General	0.8 (5643)	0.7 (9983)	0.9 (5276)
Academic	0.5 (6767)	0.5 (10390)	0.4 (7296)
Vocational	0.9 (4182)	0.8 (6685)	1.6 (1540)
COMPOSITE TEST QUARTILE			
Low	0.9 (4632)	0.8 (6708)	1.4 (2057)
Middle	0.6 (7683)	0.8 (5872)	0.7 (6030)
High	0.7 (3440)	0.8 (5784)	0.5 (3865)

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table B3.1a
Data and Standard Errors for Figure 3.1: Seniors' Plans for Next Year

	Work	School	Other
1972	31.9	59.0	9.1
1980	35.4	58.3	6.3
1992	14.2	77.9	7.9

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table 3.1b
Standard Errors for Figure 3.1: Senior's Plans for Next Year

	Work	School	Other	Unweighted N
1972	0.5	0.5	0.3	16563
1980	0.5	0.6	0.2	27433
1992	0.5	0.6	0.3	14859

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table B3.2
Standard Errors (unweighted Ns) for Percentages of Seniors Who Plan to Continue Education Next Year at Four-Year Colleges, Two-Year Academic Programs, Two-Year Vocational Programs, or Trade and Technical Schools

	Four-Year Program			Two-Year Academic			Two-Year Vocational			Trade or Technical School		
	1972	1980	1992	1972	1980	1992	1972	1980	1992	1972	1980	1992
TOTAL	0.6 (16588)	0.7 (26464)	0.8 (14056)	0.4 (16588)	0.3 (26464)	0.5 (14506)	0.2 (16588)	0.2 (26464)	0.3 (14506)	0.3 (16588)	0.2 (26464)	0.2 (14506)
SEX												
Male	0.8 (8235)	0.8 (12615)	1.0 (7149)	0.5 (8235)	0.3 (12615)	0.6 (7149)	0.3 (8235)	0.2 (12615)	0.4 (7149)	0.4 (8235)	0.3 (12615)	0.3 (7149)
Female	0.7 (8353)	0.8 (13849)	1.0 (7357)	0.5 (8353)	0.4 (13849)	0.7 (7357)	0.3 (8353)	0.3 (13849)	0.4 (7357)	0.4 (8353)	0.3 (13849)	0.3 (7357)
RACE/ETHNICITY												
Black	1.3 (2115)	1.2 (3638)	2.3 (1308)	0.6 (2115)	0.5 (3638)	1.7 (1308)	0.5 (2115)	0.4 (3638)	1.4 (1308)	0.8 (2115)	0.6 (3638)	0.8 (1308)
White	0.6 (12782)	0.8 (19538)	0.9 (10329)	0.4 (12782)	0.3 (19538)	0.5 (10329)	0.3 (12782)	0.2 (19538)	0.4 (10329)	0.3 (12782)	0.2 (19538)	0.2 (10329)
Asian	4.4 (191)	2.9 (360)	2.6 (1060)	3.0 (191)	2.3 (360)	1.5 (1060)	1.5 (191)	1.9 (360)	0.7 (1060)	1.5 (191)	1.3 (360)	1.2 (1060)
Hispanic	1.9 (771)	1.4 (3101)	1.9 (1611)	1.4 (771)	0.9 (3101)	1.8 (1611)	1.2 (771)	0.6 (3101)	1.0 (1611)	1.1 (771)	0.6 (3101)	0.6 (1611)
REGION												
Northeast	1.2 (3604)	1.6 (5520)	1.7 (2902)	0.7 (3604)	0.5 (5520)	1.0 (2902)	0.5 (3604)	0.3 (5520)	0.5 (2902)	0.6 (3604)	0.4 (5520)	0.4 (2902)
Midwest	1.0 (4546)	1.1 (7893)	1.3 (3865)	0.6 (4546)	0.4 (7893)	0.7 (3865)	0.4 (4546)	0.3 (7893)	0.6 (3865)	0.7 (4546)	0.4 (7893)	0.5 (3865)
South	1.1 (5485)	1.1 (9057)	1.4 (4807)	0.7 (5485)	0.5 (9057)	0.9 (4807)	0.3 (5485)	0.3 (9057)	0.6 (4807)	0.5 (5485)	0.4 (9057)	0.4 (4807)
West	1.4 (2958)	1.6 (4963)	1.7 (2910)	1.2 (2958)	0.9 (4963)	1.3 (2910)	0.7 (2958)	0.6 (4963)	0.7 (2910)	0.5 (2958)	0.5 (4963)	0.4 (2910)

Table B3.2
Standard Errors (unweighted Ns) for Percentages of Seniors Who Plan to Continue Education Next Year at Four-Year Colleges, Two-Year Academic Programs, Two-Year Vocational Programs, or Trade and Technical Schools
(Continued)

	Four-Year Program			**Two-Year Academic**			**Two-Year Vocational**			**Trade or Technical School**		
	1972	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**
SOCIOECONOMIC STATUS												
Low	0.7 (4809)	0.7 (8184)	1.2 (3348)	0.5 (4809)	0.4 (8184)	1.0 (3348)	0.4 (4809)	0.3 (8184)	0.6 (3348)	0.6 (4809)	0.4 (8184)	0.6 (3348)
Middle	0.6 (7885)	0.6 (12557)	1.0 (6768)	0.6 (7885)	0.4 (12557)	0.6 (6768)	0.3 (7885)	0.3 (12557)	0.5 (6768)	0.4 (7885)	0.3 (12557)	0.3 (6768)
High	1.0 (3835)	1.1 (6078)	1.2 (4390)	0.7 (3835)	0.6 (6078)	0.8 (4390)	0.4 (3835)	0.3 (6078)	0.4 (4390)	0.4 (3835)	0.2 (6078)	0.3 (4390)
HIGH SCHOOL PROGRAM												
General	0.7 (5643)	0.7 (9983)	1.2 (5135)	0.5 (5643)	0.4 (9983)	0.9 (5135)	0.4 (5643)	0.3 (9983)	0.6 (5135)	0.5 (5643)	0.3 (9983)	0.4 (5135)
Academic	0.8 (6767)	0.8 (10390)	0.9 (7171)	0.6 (6767)	0.5 (10390)	0.6 (7171)	0.3 (6767)	0.2 (10390)	0.3 (7171)	0.3 (6767)	0.2 (10390)	0.2 (7171)
Vocational	0.5 (9182)	0.5 (6685)	1.6 (1514)	0.4 (9182)	0.4 (6685)	0.9 (1514)	0.4 (9182)	0.4 (6685)	1.4 (1514)	0.7 (9182)	0.5 (6685)	0.9 (1514)
COMPOSITE TEST QUARTILE												
Low	0.6 (4632)	0.6 (6708)	1.7 (1988)	0.4 (4632)	0.4 (6708)	1.2 (1988)	0.4 (4632)	0.3 (6708)	1.2 (1988)	0.6 (4632)	0.4 (6708)	0.7 (1988)
Middle	0.7 (7683)	0.8 (5872)	1.0 (5904)	0.6 (7683)	0.5 (5872)	0.7 (5904)	0.3 (7683)	0.4 (5872)	0.4 (5904)	0.4 (7683)	0.5 (5872)	0.4 (5904)
High	1.0 (3440)	1.0 (5784)	1.1 (3845)	0.6 (3440)	0.5 (5784)	0.5 (3845)	0.4 (3440)	0.4 (5784)	0.5 (3845)	0.4 (3440)	0.4 (5784)	0.2 (3845)

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table B3.3a
Standard Errors (unweighted Ns) for Percentages of College-Bound Seniors Who Reported Various Financial Factors Were "Very Important" in Selecting a College

	Expenses			Financial Aid		
	1972	**1980**	**1992**	**1972**	**1980**	**1992**
TOTAL	0.6 (8475)	0.5 (19424)	0.8 (12297)	0.6 (8433)	0.6 (19362)	0.8 (12285)
SEX						
Male	0.8 (4289)	0.7 (8859)	1.0 (5760)	0.8 (4267)	0.7 (8835)	1.2 (5755)
Female	1.0 (4186)	0.6 (10565)	1.1 (6537)	0.9 (4166)	0.7 (10527)	1.0 (6530)
RACE/ETHNICITY						
Black	1.9 (956)	1.3 (2473)	2.8 (1030)	1.8 (955)	1.1 (2461)	2.8 (1026)
White	0.7 (6779)	0.5 (13964)	0.8 (8789)	0.6 (6742)	0.6 (13929)	0.9 (8782)
Asian	4.6 (147)	3.6 (324)	2.2 (981)	3.8 (146)	3.2 (325)	2.4 (981)
Hispanic	2.8 (356)	1.7 (2189)	2.2 (1348)	3.0 (355)	1.8 (2176)	2.0 (1347)
REGION						
Northeast	1.5 (1963)	1.3 (3986)	1.7 (2571)	1.2 (1954)	1.4 (3979)	1.8 (2567)
Midwest	1.1 (2149)	0.9 (5375)	1.2 (3253)	1.2 (2134)	0.9 (5363)	1.5 (3251)
South	1.1 (2646)	0.9 (6228)	1.5 (3957)	1.1 (2635)	1.1 (6201)	1.6 (3954)
West	1.3 (1718)	1.3 (3900)	1.6 (2498)	1.6 (1711)	1.4 (3883)	1.7 (2494)

Table B3.3a
Standard Errors (unweighted Ns) for Percentages of College-Bound Seniors Who Reported Various Financial Factors Were "Very Important" in Selecting a College (Continued)

	Expenses			Financial Aid		
	1972	**1980**	**1992**	**1972**	**1980**	**1992**
SOCIOECONOMIC STATUS						
Low	1.6 (1585)	0.9 (4889)	1.4 (2387)	1.5 (1584)	0.9 (4864)	1.6 (2381)
Middle	1.0 (3872)	0.7 (9015)	1.0 (5734)	0.9 (3851)	0.7 (8995)	1.1 (5732)
High	0.9 (2998)	0.8 (5358)	1.2 (4176)	0.8 (2978)	0.8 (5341)	1.3 (4172)
HIGH SCHOOL PROGRAM						
General	1.1 (2170)	0.8 (6323)	1.1 (4041)	1.2 (2156)	0.8 (6296)	1.1 (4037)
Academic	0.8 (5435)	0.8 (9293)	1.0 (6762)	0.8 (5415)	0.8 (9286)	1.1 (6756)
Vocational	1.9 (871)	1.0 (3651)	2.3 (990)	1.9 (863)	1.0 (3625)	2.3 (991)
COMPOSITE TEST QUARTILE						
Low	1.8 (1176)	1.1 (3544)	2.2 (1335)	1.9 (1165)	1.2 (3519)	2.2 (1331)
Middle	0.9 (4058)	0.7 (8511)	0.9 (5015)	0.8 (4037)	0.7 (8483)	1.1 (5010)
High	1.1 (2808)	0.8 (5228)	1.1 (3688)	1.0 (2799)	0.9 (5225)	1.3 (3685)

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table B3.3b
Standard Errors (unweighted Ns) for Percentages of College-Bound Seniors Who Reported Various Academic Factors Were "Very Important" in Selecting a College

	Course Availability			Reputation of Institution		
	1972	**1980**	**1992**	**1972**	**1980**	**1992**
TOTAL	0.6 (8411)	0.5 (19168)	0.7 (12266)	0.7 (8415)	0.5 (19210)	0.7 (12226)
SEX						
Male	0.9 (4257)	0.6 (8744)	1.0 (5742)	0.9 (4257)	0.7 (8765)	1.0 (5721)
Female	0.8 (4154)	0.6 (10424)	0.9 (6524)	0.9 (4158)	0.7 (10445)	1.0 (6505)
RACE/ETHNICITY						
Black	2.0 (928)	1.2 (2408)	2.7 (1022)	2.0 (930)	1.2 (2412)	2.6 (1021)
White	0.7 (6753)	0.5 (13834)	0.8 (8772)	0.7 (6749)	0.5 (13852)	0.8 (8750)
Asian	4.1 (147)	2.6 (321)	2.4 (980)	4.8 (147)	3.6 (322)	2.3 (972)
Hispanic	2.6 (351)	1.6 (2137)	2.0 (1343)	2.8 (354)	1.6 (2149)	2.4 (1335)
REGION						
Northeast	1.1 (1951)	0.9 (3942)	1.3 (2565)	1.4 (1954)	0.9 (3949)	1.4 (2565)
Midwest	1.2 (2134)	0.8 (5308)	1.3 (3249)	1.4 (2133)	0.9 (5331)	1.3 (3244)
South	1.1 (2622)	0.8 (6130)	1.3 (3944)	1.0 (2620)	0.8 (6140)	1.4 (3924)
West	1.3 (1705)	1.0 (3805)	1.4 (2489)	1.2 (1709)	1.0 (3851)	1.6 (2474)

Table B3.3b
Standard Errors (unweighted Ns) for Percentages of College-Bound Seniors Who Reported Various Academic Factors Were "Very Important" in Selecting a College
(Continued)

	Course Availability			Reputation of Institution		
	1972	1980	1992	1972	1980	1992
SOCIOECONOMIC STATUS						
Low	1.5 (1562)	0.9 (4796)	1.4 (2374)	1.5 (1566)	0.9 (4807)	1.5 (2367)
Middle	0.9 (3846)	0.6 (8922)	1.0 (5728)	0.9 (3848)	0.6 (8927)	1.0 (5701)
High	1.0 (2986)	0.8 (5298)	1.4 (4164)	1.0 (2982)	0.8 (5318)	1.2 (4158)
HIGH SCHOOL PROGRAM						
General	1.2 (2140)	0.7 (6219)	1.1 (4026)	1.2 (2145)	0.7 (6236)	1.2 (4014)
Academic	0.8 (5413)	0.6 (9226)	0.9 (6748)	0.8 (5413)	0.6 (9240)	1.0 (6728)
Vocational	1.9 (859)	1.0 (3574)	1.9 (989)	2.0 (858)	1.0 (3580)	2.2 (984)
COMPOSITE TEST QUARTILE						
Low	1.6 (1145)	1.1 (3433)	2.3 (1331)	1.6 (1144)	1.0 (3460)	2.3 (1319)
Middle	0.9 (4038)	0.6 (8413)	0.9 (4998)	0.9 (4043)	0.7 (8427)	1.0 (4989)
High	1.0 (2801)	0.7 (5206)	1.2 (3683)	1.1 (2801)	0.9 (5211)	1.3 (3670)

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table B3.4
Standard Errors (unweighted Ns) for Percentages of College-Bound Seniors Expecting to Major in Each Field

	1972	1980	1992
Agriculture	0.2	0.2	0.2
	(7556)	(16047)	(9770)
Architecture	0.2	0.2	0.2
Art	0.2	0.2	0.3
Biological Sciences	0.4	0.2	0.2
Business	0.4	0.4	0.6
Communications	0.2	0.2	0.3
Computer and Information Science	0.2	0.2	0.3
Education	0.4	0.2	0.4
Engineering	0.3	0.3	0.4
English	0.2	0.2	0.3
Ethnic Studies	0.1	0.0	0.3
Foreign Languages	0.2	0.1	0.1
Health Occupations	0.5	0.3	0.6
Home Economics	0.1	0.1	0.1
Interdisciplinary Studies	0.2	0.0	0.0
Mathematics	0.2	0.1	0.1
Music	0.2	0.2	0.2
Philosophy	0.2	0.1	0.1
Physical Science	0.2	0.1	0.2
Pre-Professional[1]	0.0	0.2	0.6
Social Sciences	0.5	0.3	0.5

[1] Category not included in 1972 questionnaire.

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table B4.1
Standard Errors (unweighted Ns) for Percentages of Seniors Planning to Attain Various Levels of Education

	High School or Less			Some College			Finish College			Graduate School		
	1972	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**	**1972**	**1980**	**1992**
TOTAL	0.4 (12282)	0.5 (26426)	0.3 (14713)	0.5 (12282)	0.5 (26426)	0.6 (14713)	0.6 (12282)	0.4 (26426)	0.6 (14713)	0.4 (12282)	0.5 (26426)	0.7 (14713)
SEX												
Male	0.5 (5963)	0.6 (12563)	0.4 (7195)	0.8 (5963)	0.6 (12563)	0.8 (7195)	0.8 (5963)	0.5 (12563)	0.9 (7195)	0.6 (5963)	0.6 (12563)	1.0 (7195)
Female	0.6 (6319)	0.5 (13863)	0.3 (7518)	0.7 (6319)	0.6 (13863)	0.8 (7518)	0.8 (6319)	0.5 (13863)	0.9 (7518)	0.4 (6319)	0.6 (13863)	0.9 (7518)
RACE/ETHNICITY												
Black	1.3 (1110)	0.9 (3631)	0.8 (1332)	1.7 (1110)	1.0 (3631)	1.7 (1332)	1.6 (1110)	0.8 (3631)	2.2 (1332)	1.2 (1110)	1.0 (3631)	2.1 (1332)
White	0.5 (10144)	0.5 (19502)	0.3 (10459)	0.6 (10144)	0.5 (19502)	0.7 (10459)	0.6 (10144)	0.4 (19502)	0.7 (10459)	0.4 (10144)	0.5 (19502)	0.8 (10459)
Asian	3.2 (148)	1.1 (354)	0.8 (1059)	3.8 (148)	2.4 (354)	2.4 (1059)	4.8 (148)	3.2 (354)	2.4 (1059)	3.7 (148)	3.5 (354)	2.5 (1059)
Hispanic	2.0 (458)	1.4 (3112)	0.9 (1667)	2.6 (458)	1.3 (3112)	2.1 (1667)	2.6 (458)	1.1 (3112)	1.6 (1667)	1.6 (458)	1.0 (3112)	1.8 (1667)
REGION												
Northeast	1.2 (2746)	1.2 (5512)	0.6 (2888)	1.1 (2746)	1.1 (5512)	1.4 (2888)	1.2 (2746)	0.8 (5512)	1.6 (2888)	0.8 (2746)	1.4 (5512)	1.8 (2888)
Midwest	1.1 (3517)	0.8 (7924)	0.5 (3915)	0.9 (3517)	0.8 (7924)	1.1 (3915)	1.0 (3517)	0.7 (7924)	1.1 (3915)	0.6 (3517)	0.7 (7924)	1.1 (3915)
South	0.8 (3899)	0.8 (9039)	0.5 (4919)	1.0 (3899)	0.8 (9039)	1.1 (4919)	1.1 (3899)	0.7 (9039)	1.1 (4919)	0.8 (3899)	0.7 (9039)	1.3 (4919)
West	0.9 (2123)	0.8 (4954)	0.6 (2969)	1.4 (2123)	1.1 (4954)	1.3 (2969)	1.4 (2123)	0.8 (4954)	1.3 (2969)	0.9 (2123)	1.2 (4954)	1.3 (2969)

Table B4.1
Standard Errors (unweighted Ns) for Percentages of Seniors Planning to Attain Various Levels of Education (Continued)

	High School or Less			Some College			Finish College			Graduate School		
	1972	1980	1992	1972	1980	1992	1972	1980	1992	1972	1980	1992
SOCIOECONOMIC STATUS												
Low	1.0 (3059)	0.8 (8193)	0.7 (3395)	1.0 (3059)	0.7 (8193)	1.1 (3395)	0.9 (3059)	0.5 (8193)	1.1 (3395)	0.5 (3059)	0.4 (8193)	1.1 (3395)
Middle	1.1 (5897)	0.5 (12548)	0.3 (6897)	0.8 (5897)	0.6 (12548)	0.8 (6897)	0.8 (5897)	0.5 (12548)	0.9 (6897)	0.4 (5897)	0.5 (12548)	0.8 (6897)
High	0.5 (3305)	0.4 (6066)	0.2 (4421)	0.7 (3305)	0.7 (6066)	0.7 (4421)	1.0 (3305)	0.4 (6066)	1.2 (4421)	0.9 (3305)	0.5 (6066)	1.3 (4421)
HIGH SCHOOL PROGRAM												
General	0.8 (3896)	0.7 (10003)	0.5 (5228)	0.9 (3896)	0.6 (10003)	1.0 (5228)	0.9 (3896)	0.6 (10003)	1.0 (5228)	0.4 (3896)	0.4 (10003)	0.9 (5228)
Academic	0.4 (5710)	0.3 (10358)	0.1 (7240)	0.7 (5710)	0.6 (10358)	0.6 (7240)	0.8 (5710)	0.6 (10358)	1.0 (7240)	0.6 (5710)	0.8 (10358)	1.0 (7240)
Vocational	1.2 (2679)	0.8 (6685)	1.0 (1567)	1.2 (2679)	0.8 (6685)	1.8 (1567)	0.7 (2679)	0.5 (6685)	1.6 (1567)	0.3 (2679)	0.4 (6685)	1.4 (1567)
COMPOSITE TEST QUARTILE												
Low	1.2 (2406)	0.8 (6715)	1.0 (1997)	1.2 (2406)	0.7 (6715)	1.6 (1997)	0.9 (2406)	0.5 (6715)	1.2 (1997)	0.4 (2406)	0.4 (6715)	1.6 (1997)
Middle	0.6 (6072)	0.8 (5896)	0.4 (6044)	0.7 (6072)	0.8 (5896)	0.9 (6044)	0.7 (6072)	0.6 (5896)	0.9 (6044)	0.4 (6072)	0.6 (5896)	0.8 (6044)
High	0.5 (3221)	0.6 (5781)	0.3 (3850)	0.7 (3221)	0.8 (5781)	0.6 (3850)	1.0 (3221)	0.8 (5781)	1.3 (3850)	0.9 (3221)	0.7 (5781)	1.3 (3850)

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table B4.2
Standard Errors (unweighted Ns) for Percentages of Seniors Who Expect to be in Various Occupations

	1972	1980	1992
Clerical	0.4 (1938)	0.2 (2615)	0.2 (475)
Craftsman	0.3 (944)	0.2 (1999)	0.2 (364)
Farmer	0.1 (210)	0.1 (496)	0.1 (131)
Homemaker	0.2 (383)	0.1 (695)	0.1 (153)
Laborer	0.2 (316)	0.1 (472)	0.1 (98)
Manager	0.2 (377)	0.2 (1807)	0.3 (805)
Military	0.2 (311)	0.1 (523)	0.3 (369)
Operative	0.2 (302)	0.1 (699)	0.2 (132)
Professional	0.6 (5543)	0.5 (11285)	0.7 (8334)
Proprietor	0.1 (222)	0.2 (969)	0.3 (905)
Protective Services	0.2 (261)	0.1 (479)	0.2 (553)
Sales	0.2 (373)	0.1 (511)	0.2 (257)
Service	0.2 (532)	0.2 (875)	0.2 (324)
Technical	0.2 (857)	0.2 (2138)	0.3 (798)

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table B4.3
Standard Errors (unweighted Ns) for Percentages of Seniors Who Expect to be in Various Occupations by Sex and Race/Ethnicity

		1972	1980	1992
Clerical (1)				
Sex:	Male	0.2 (5982)	0.1 (12144)	0.2 (6765)
	Female	0.7 (6587)	0.4 (13419)	0.4 (6933)
Race:	Black	1.7 (1078)	0.6 (3503)	0.7 (1239)
	White	0.4 (10427)	0.3 (18867)	0.2 (9699)
	Asian	2.5 (150)	1.4 (350)	0.6 (1014)
	Hispanic	2.5 (480)	0.9 (2968)	0.8 (1567)
Craftsman (2)				
Sex:	Male	0.6 (5982)	0.4 (12144)	0.3 (6765)
	Female	0.1 (6587)	0.1 (13419)	0.1 (6933)
Race:	Black	0.6 (1078)	0.5 (3503)	0.4 (1239)
	White	0.3 (10427)	0.3 (18867)	0.2 (9699)
	Asian	1.7 (150)	1.2 (350)	0.8 (1014)
	Hispanic	1.4 (480)	0.7 (2968)	0.4 (1567)

Table B4.3
Standard Errors (unweighted Ns) for Percentages of Seniors Who Expect to be in Various Occupations by Sex and Race/Ethnicity (Continued)

		1972	1980	1992
Farmer (3)				
Sex:	Male	0.2 (5982)	0.2 (12144)	0.2 (6765)
	Female	0.1 (6587)	0.1 (13419)	0.1 (6933)
Race:	Black	0.2 (1078)	0.1 (3503)	0.4 (1239)
	White	0.1 (10427)	0.2 (18867)	0.1 (9699)
	Asian	0.0 (150)	0.4 (350)	0.0 (1014)
	Hispanic	0.5 (480)	0.4 (2968)	0.3 (1567)
Homemaker (4)				
Sex:	Male	0.0 (5982)	0.0 (12144)	0.0 (6765)
	Female	0.3 (6587)	0.3 (13419)	0.2 (6933)
Race:	Black	0.5 (1078)	0.2 (3503)	0.2 (1239)
	White	0.2 (10427)	0.2 (18867)	0.2 (9699)
	Asian	0.0 (150)	0.7 (350)	0.3 (1014)
	Hispanic	0.8 (480)	0.4 (2968)	0.2 (1567)

Table B4.3
Standard Errors (unweighted Ns) for Percentages of Seniors Who Expect to be in Various Occupations by Sex and Race/Ethnicity (Continued)

		1972	1980	1992
Laborer (5)				
Sex:	Male	0.3 (5982)	0.2 (12144)	0.2 (6765)
	Female	0.1 (6587)	0.0 (13419)	0.0 (6933)
Race:	Black	0.5 (1078)	0.2 (3503)	0.2 (1239)
	White	0.2 (10427)	0.1 (18867)	0.1 (9699)
	Asian	0.6 (150)	0.4 (350)	0.7 (1014)
	Hispanic	0.8 (480)	0.4 (2968)	0.2 (1567)
Manager (6)				
Sex:	Male	0.3 (5982)	0.3 (12144)	0.5 (6765)
	Female	0.2 (6587)	0.3 (13419)	0.4 (6933)
Race:	Black	0.6 (1078)	0.6 (3503)	1.4 (1239)
	White	0.2 (10427)	0.2 (18867)	0.3 (9699)
	Asian	0.8 (150)	2.5 (350)	1.7 (1014)
	Hispanic	0.8 (480)	0.5 (2968)	0.9 (1567)

Table B4.3
Standard Errors (unweighted Ns) for Percentages of Seniors Who Expect to be in Various Occupations by Sex and Race/Ethnicity
(Continued)

		1972	1980	1992
Military (7)				
Sex:	Male	0.3 (5982)	0.2 (12144)	0.6 (6765)
	Female	0.1 (6587)	0.1 (13419)	0.2 (6933)
Race:	Black	0.8 (1078)	0.4 (3503)	1.8 (1239)
	White	0.2 (10427)	0.1 (18867)	0.3 (9699)
	Asian	1.1 (150)	0.9 (350)	0.6 (1014)
	Hispanic	0.6 (480)	0.4 (2968)	0.7 (1567)
Operative (8)				
Sex:	Male	0.3 (5982)	0.2 (12144)	0.3 (6765)
	Female	0.1 (6587)	0.1 (13419)	0.1 (6933)
Race:	Black	0.5 (1078)	0.3 (3503)	0.6 (1239)
	White	0.2 (10427)	0.1 (18867)	0.2 (9699)
	Asian	1.7 (150)	0.8 (350)	0.4 (1014)
	Hispanic	0.8 (480)	0.5 (2968)	0.2 (1567)

Table B4.3
Standard Errors (unweighted Ns) for Percentages of Seniors Who Expect to be in Various Occupations by Sex and Race/Ethnicity
(Continued)

		1972	1980	1992
Professional (9)				
Sex:	Male	0.9 (5982)	0.7 (12144)	1.1 (6765)
	Female	(0.8) (6587)	0.6 (13419)	0.8 (6933)
Race:	Black	2.0 (1078)	1.1 (3503)	2.3 (1239)
	White	0.7 (10427)	0.6 (18867)	0.8 (9699)
	Asian	4.5 (150)	3.5 (350)	2.7 (1014)
	Hispanic	2.5 (480)	1.5 (2968)	2.2 (1567)
Proprietor (10)				
Sex:	Male	0.2 (5982)	0.2 (12144)	0.5 (6765)
	Female	0.1 (6587)	0.2 (13419)	0.4 (6933)
Race:	Black	0.3 (1078)	0.4 (3503)	0.9 (1239)
	White	0.2 (10427)	0.2 (18867)	0.4 (9699)
	Asian	1.0 (150)	0.8 (350)	1.6 (1014)
	Hispanic	0.6 (480)	0.5 (2968)	1.0 (1567)

Table B4.3
Standard Errors (unweighted Ns) for Percentages of Seniors Who Expect to be in Various Occupations by Sex and Race/Ethnicity
(Continued)

		1972	1980	1992
Protective Services (11)				
Sex:	Male	0.3 (5982)	0.2 (12144)	0.4 (6765)
	Female	0.1 (6587)	0.1 (13419)	0.2 (6933)
Race:	Black	0.4 (1078)	0.2 (3503)	0.7 (1239)
	White	0.2 (10427)	0.1 (18867)	0.3 (9699)
	Asian	0.3 (150)	0.6 (350)	0.9 (1014)
	Hispanic	0.9 (480)	0.4 (2968)	0.8 (1567)
Sales (12)				
Sex:	Male	0.2 (5982)	0.2 (12144)	0.4 (6765)
	Female	0.3 (6587)	0.2 (13419)	0.2 (6933)
Race:	Black	0.4 (1078)	0.4 (3503)	0.5 (1239)
	White	0.2 (10427)	0.1 (18867)	0.3 (9699)
	Asian	1.2 (150)	0.1 (350)	0.4 (1014)
	Hispanic	0.6 (480)	0.4 (2968)	0.4 (1567)

Table B4.3
Standard Errors (unweighted Ns) for Percentages of Seniors Who Expect to be in Various Occupations by Sex and Race/Ethnicity
(Continued)

		1972	1980	1992
Service (13)				
Sex:	Male	0.2 (5982)	0.1 (12144)	0.2 (6765)
	Female	0.3 (6587)	0.3 (13419)	0.3 (6933)
Race:	Black	0.5 (1078)	0.4 (3503)	0.5 (1239)
	White	0.2 (10427)	0.2 (18867)	0.2 (9699)
	Asian	3.3 (150)	1.0 (350)	0.3 (1014)
	Hispanic	1.1 (480)	0.5 (2968)	0.8 (1567)
Technical (14)				
Sex:	Male	0.4 (5982)	0.3 (12144)	0.5 (6765)
	Female	0.3 (6587)	0.2 (13419)	0.4 (6933)
Race:	Black	0.8 (1078)	0.6 (3503)	0.8 (1239)
	White	0.3 (10427)	0.2 (18867)	0.3 (9699)
	Asian	2.6 (150)	1.9 (350)	1.2 (1014)
	Hispanic	1.4 (480)	0.7 (2968)	1.0 (1567)

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Appendix C:

Description of Surveys and Cross-Cohort Comparisons

Appendix C. Description of Surveys and Cross-Cohort Comparisons

The U.S. Department of Education's National Center for Education Statistics (NCES) is mandated to "collect and disseminate statistics and other data related to education in the United States" and to "conduct and publish reports on specific analyses of the meaning and significance of such statistics" (Education Amendments of 1974-Public Law 93-380, Title V, Section 501, amending Part A of the General Education Provisions Act).

Consistent with this mandate and in response to the need for policy-relevant, time-series data on nationally representative samples of elementary and secondary students, NCES instituted the National Education Longitudinal Studies (NELS) program, a continuing long-term project. The general aim of the NELS program is to study the educational, vocational, and personal development of students at various grade levels, and the personal, familial, social, institutional, and cultural factors that may affect that development. The NELS program currently consists of three major studies: the National Longitudinal Study of the High School Class of 1972 (NLS-72); High School and Beyond (HS&B); and the National Education Longitudinal Study of 1988 (NELS:88). Taken together, these studies represent the educational experience of youth from three decades -- the 1970s, 1980s, and 1990s. A fourth NELS study that will begin with a kindergarten cohort - the Early Childhood Longitudinal Study (ECLS) - is currently in its design phase. Figure 1-1 illustrates the increasing number of issues that have become part of NCES's National Education Longitudinal Studies research agenda. A brief description of NLS-72, HS&B, and NELS:88 follows.

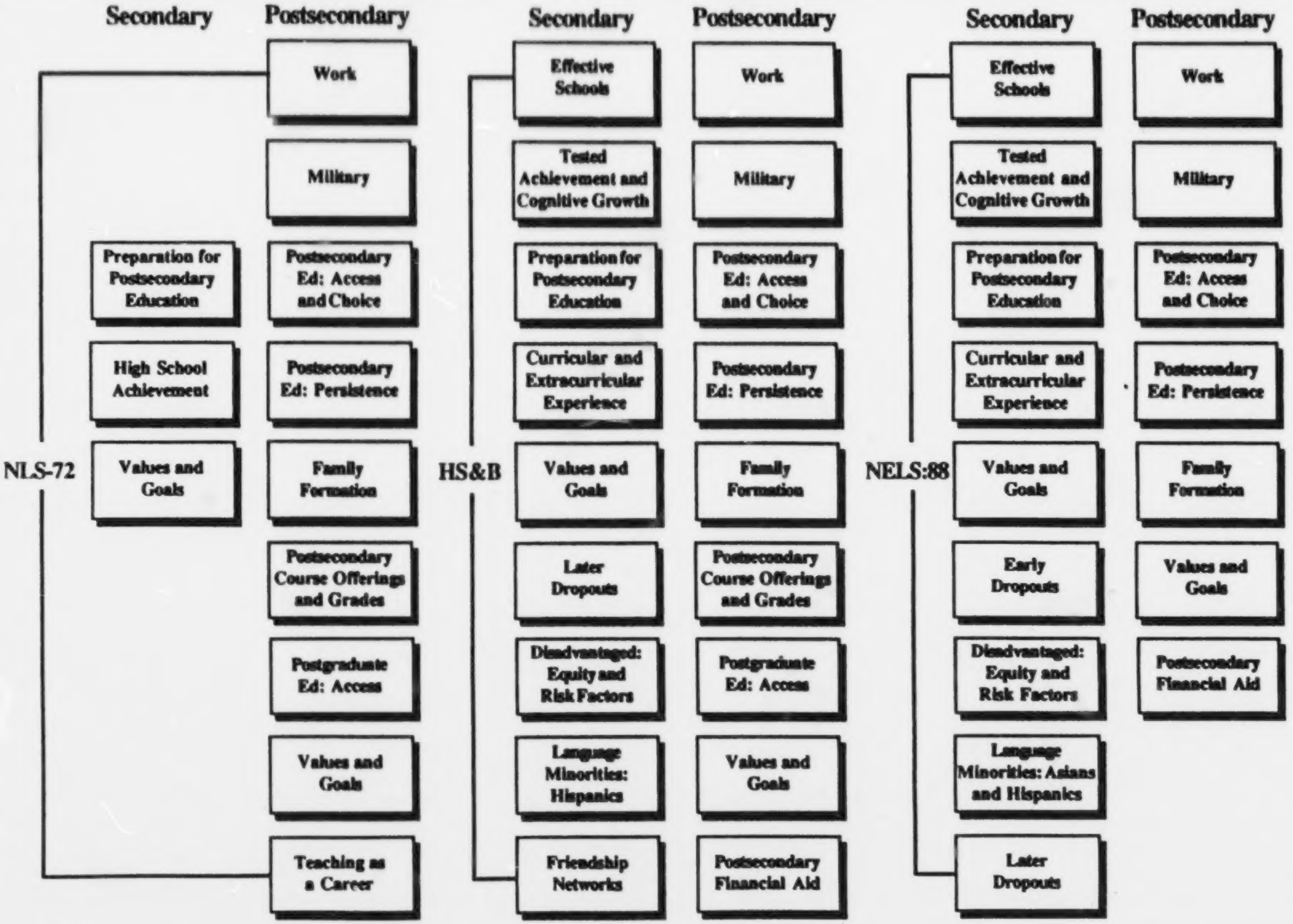
The National Longitudinal Study of the 1970s: NLS-72. The first of the NELS projects, the National Longitudinal Study of the High School Class of 1972 (NLS-72), began in the spring of 1972 with a survey of a national probability sample of 19,001 seniors from 1,061 public, secular private, and church-affiliated high schools. The sample was designed to be representative of the approximately three million high school seniors enrolled in more than 17,000 schools in the spring of 1972. Each sample member was asked to complete a student questionnaire and a 69-minute test battery. School administrators were also asked to supply survey data on each student, as well as information about the schools' programs, resources, and grading systems. Five follow-ups, conducted in 1973, 1974, 1976, 1979, and 1986, have been completed.

In addition to background information, the NLS-72 base year and follow-up surveys collected data on respondents' educational activities such as schools attended, grades received, and degree of satisfaction with their educational institutions. Participants were also asked about work experiences, periods of unemployment, job satisfaction, military service, marital status, and children. Respondents have also supplied attitudinal information on self-concept, goals, participation in political activities, and ratings of their high schools.

High School and Beyond of the 1980s: HS&B. The next major longitudinal study sponsored by NCES was High School and Beyond. HS&B was initiated in order to capture changes that had occurred in education-related and more general social conditions, in federal and state programs, and in the needs and characteristics of students since the time of the earlier survey. Thus, HS&B was designed to maintain the flow of education data to policymakers at all levels who need to base their decisions on data that are reliable, relevant, and current.

Base year data collection was conducted in the spring of 1980. Students were selected using a two-stage probability sample with schools as the first-stage units and students within schools as the second-stage units. Unlike NLS-72, HS&B included cohorts of both 10th and 12th graders. Since the

Figure 1-1: Development of key research issues for the NCES National Education Longitudinal Studies Program



Secondary
Postsecondary
Secondary
Postsecondary
Secondary
Postsecondary
NLS-72
Preparation for Postsecondary Education
High School Achievement
Values and Goals
Work
Military
Postsecondary Ed: Access and Choice
Postsecondary Ed: Persistence
Family Formation
Postsecondary Course Offerings and Grades
Postgraduate Ed: Access
Values and Goals
Teaching as a Career
HS&B
Effective Schools
Tested Achievement and Cognitive Growth
Preparation for Postsecondary Education
Curricular and Extracurricular Experience
Values and Goals
Later Dropouts
Disadvantaged: Equity and Risk Factors
Language Minorities: Hispanics
Friendship Networks
Work
Military
Postsecondary Ed: Access and Choice
Postsecondary Ed: Persistence
Family Formation
Postsecondary Course Offerings and Grades
Postgraduate Ed: Access
Values and Goals
Postsecondary Financial Aid
NELS:88
Effective Schools
Tested Achievement and Cognitive Growth
Preparation for Postsecondary Education
Curricular and Extracurricular Experience
Values and Goals
Early Dropouts
Disadvantaged: Equity and Risk Factors
Language Minorities: Asians and Hispanics
Later Dropouts
Work
Military
Postsecondary Ed: Access and Choice
Postsecondary Ed: Persistence
Family Formation
Values and Goals
Postsecondary Financial Aid

base year data collection in 1980, four follow-ups of the HS&B cohorts have been completed, in the spring of 1982, 1984, 1986, and (for the sophomore cohort only) 1992.

The four NELS program cohorts (NLS-72 seniors, the HS&B sophomores and seniors, and NELS:88 eighth graders) are displayed in Figure 1-2 according to their initial and subsequent survey years and their modal age at the time of each survey. As illustrated, NLS-72 seniors were first surveyed in 1972 at age 18 and have been resurveyed five times since, with the last survey occurring in 1986, when these respondents were about 32 years of age. The HS&B cohorts have been surveyed at points in time that would permit as much comparison as possible with the time points selected for NLS-72.

The National Education Longitudinal Study of 1988. The *base year* of the National Education Longitudinal Study of 1988 (NELS:88) represented the first stage of a major longitudinal effort designed to provide trend data about critical transitions experienced by students as they leave elementary school and progress through high school and into postsecondary institutions or the work force. The base year study, conducted in the spring term of the 1987-88 school year, selected 26,432 potential eighth grade participants, of whom 24,599 were successfully surveyed in 1,052 public and private schools. Additional data were gathered from eighth graders' parents, teachers, and principals.

The *first follow-up* in 1990 provided the first opportunity for longitudinal measurement of the 1988 baseline sample. It also provided a comparison point to high school sophomores ten years before, as studied in HS&B. The study captured the population of early dropouts (those who leave school between the end of eighth grade and the end of tenth grade), while monitoring the transition of the student population into secondary schooling.

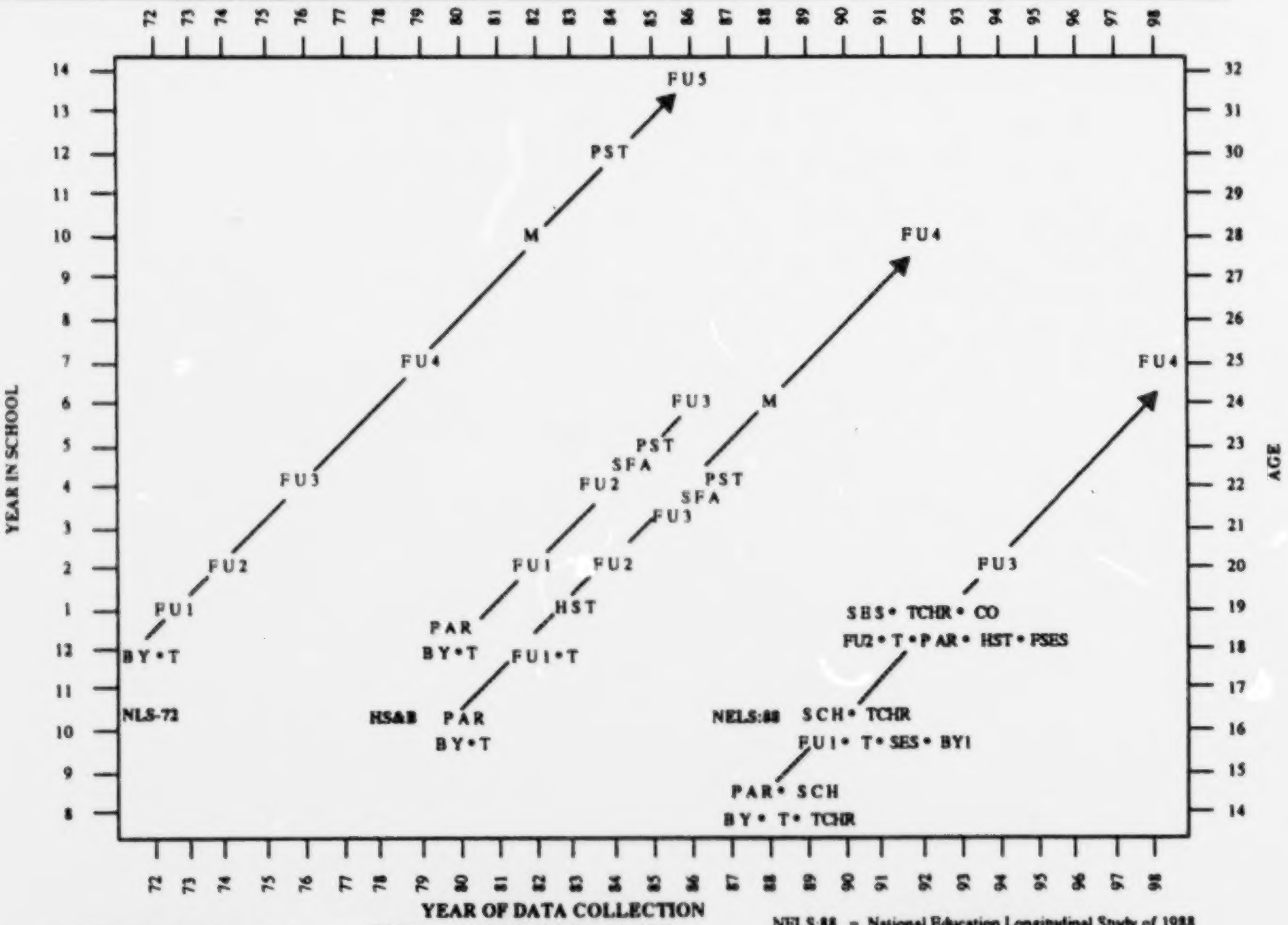
The *second follow-up* took place in 1992, when most sample members entered the second term of their senior year. The second follow-up provides a culminating measurement of learning in the course of secondary school, and also collects information that will facilitate investigation of the transition into the labor force and postsecondary education after high school. Freshening[22] the NELS:88 sample to represent the 12th grade class of 1992 makes trend comparisons with the senior cohorts that were studied in NLS-72 and HS&B possible. The NELS:88 *second follow-up* resurveyed students who were identified as dropouts in 1990, and identified and surveyed those additional students who left school after the *first follow-up*.

The NELS:88 *third follow-up* took place in 1994, at a time when most sample members were in postsecondary education or in the labor force. A major goal of the 1994 round was to provide data for trend comparisons with NLS-72 and HS&B, and to continue cross-wave comparisons with previous NELS:88 rounds. Additionally, the *third follow-up* will permit researchers to assess the effect of eighth grade and high school curricular experiences on postsecondary education choice. The 1994 follow-up will provide the means to examine access of individuals with different backgrounds to different kinds of educational institutions. It will also facilitate study of the influences of high school education experiences on postsecondary education and employment opportunities and choices. Labor force participation, postsecondary persistence, curricular progress, and family formation are further research topics which will be explored by the *third follow-up*. Additionally, the 1994 survey will provide a basis for assessing how

---

[22] The process referred to here as "freshening" added students who were not in the base year sampling frame, either because they were not in the country or because they were not in eighth grade in the spring term of 1988. The 1990 freshening process provided a representative sample of students enrolled in 10th grade in the spring of 1990. The 1992 freshening process provided a representative sample of students enrolled in 12th grade in the spring of 1992.

Figure 1-2: Research design for the NCES National Education Longitudinal Studies (NELS) program



NLS-72 = National Longitudinal Study of the High School Class of 1972
BY = Base year data collection
FU1 = First follow-up data collection
FU2 = Second follow-up data collection
FU3 = Third follow-up data collection
FU4 = Fourth follow-up data collection
FU5 = Fifth follow-up data collection
M = Maintenance of address data
PST = Postsecondary education transcripts
T = Cognitive test administration

HS&B = High School & Beyond: 1980
BY = Base year data collection
FU1 = First follow-up data collection
FU2 = Second follow-up data collection
FU3 = Third follow-up data collection
FU4 = Fourth follow-up data collection
HST = High school transcripts
M = Maintenance of address data
PAR = Survey of parents
PST = Postsecondary education transcripts
SFA = Student financial aid records
T = Cognitive test administration

NELS:88 = National Education Longitudinal Study of 1988
BY = Base year data collection
BY1 = Base Year Ineligible Study
FSES = Followback Study of Excluded Students
FU1 = First follow-up data collection
FU2 = Second follow-up data collection
FU3 = Third follow-up data collection
FU4 = Fourth follow-up data collection
HST = High school transcripts
CO = Course offerings
PAR = Survey of parents
SCH = School administrator survey
SES = School effectiveness study
T = Cognitive test administration
TCHR = Survey of teachers

many dropouts have returned to school and by what route, and will measure the access of dropouts to vocational training programs and to other postsecondary institutions. A *fourth follow-up* is scheduled for 1998.

Cross-sectional and longitudinal analysis. NELS:88 is a longitudinal study. In such a study, a probability sample of a population is drawn at one time (for NELS:88, 1988 eighth graders) and the same individuals are measured at later times (for NELS:88, 1990, 1992, 1994, and 1998). In a cross-sectional survey a probability sample is drawn from the population and measured at one point in time, and data are collected for only that one point in time.

NELS:88 data can be analyzed longitudinally--one can examine what happens to the eighth grade cohort over time (for example, one can measure gains in mathematics achievement between 1988 and 1992, or who drops out of school between 1988 and 1990). The capacity to measure change in individuals over time is a distinctive strength of the NELS:88 design. Following individual educational histories generally provides the best basis for making causal inference about educational processes and their effects.

The base year of a longitudinal survey is also, by definition, a cross-sectional survey. Hence NELS:88 base year data can also be analyzed cross-sectionally--researchers can look at the situation of a nationally representative sample of eighth graders in 1987-88. NELS:88 has a special sample-freshening feature which effectively supplies two additional nationally representative cross-sections: the nation's spring 1990 sophomores and spring 1992 seniors. Thus, the *first and second follow-up* data can also be analyzed either cross-sectionally or longitudinally.

Cross-sectional data provide a snapshot at a single point in time. The capacity for *longitudinal* analysis--the measurement of individual-level change--is the paramount strength of NELS:88. However, group-level cross-sectional data, as well, can be employed to measure stability and change over time, *when cross-sections are repeated to form a time series.* NELS:88 provides two examples, through the reader should note that the first approach is not optimal: (1) Across waves within NELS:88, one can measure group-level change across successive cross-sections--eighth graders in 1988, sophomores in 1990, and seniors in 1992. An instance of this would be examining eighth, tenth, and twelfth grade math scores of Hispanics relative to whites to see if disparities became larger, smaller, or remained the same as grade level increased.[23] (2) *At the intercohort level, one can use a single round of NELS:88 in conjunction with a corresponding population taken from comparable studies (e.g., NLS-72 and HS&B) as repeated cross-sections (e.g., of seniors in 1972, 1980/82, and 1992) to measure trends.* Such cross-cohort analysis is the subject of this appendix.

The three NELS study series--NLS-72, HS&B, and NELS:88--offer a number of possible time points for comparison. The possible comparison points, and the considerations of content and design which may affect the comparability of data across the cohorts, are discussed in detail in the remainder of this appendix.

---

[23] This kind of analysis is only appropriate if the phenomenon to be studied is not subject to extremely rapid change, because it does not permit historical trends and grade level differences to be disentangled. Note that this measurement would involve use of three overlapping but nonidentical samples. For example, not all eighth graders would progress to tenth grade at time 2 (1990), and to be representative of tenth graders (in 1990) the sample would have to be freshened with individuals who were not eighth graders in 1988, and so on. In contrast, a longitudinal measurement would employ an identical (that is, a single) sample surveyed at three time points--the eighth grade cohort in 1988, 1990, and 1992--following individuals who remain in school regardless of whether they progress in modal sequence, and following individuals who leave school as well, that is, who become dropouts or early graduates.

Conducting Trend Analyses of NLS-72, HS&B, and NELS:88 Seniors: Analytical Implications of Design Differences Between the Studies

This section discusses the kinds of comparisons that can be made between NELS:88, HS&B, and NLS-72, and the time points at which these comparisons can be made. This appendix also points to issues of similarity and difference in sample design and test and questionnaire content. NELS:88 has been specifically designed to facilitate comparisons with NLS-72 and HS&B. At the "student" level, three kinds of comparative analysis are possible (described below and summarized in Table 1).

1) Cohorts can be compared on an *intergenerational or cross-cohort time-lag basis*. Both cross-sectional and longitudinal time-lag comparisons are possible. For example, (1-A) cross-sectionally, NELS:88 1992 results (when restricted to sample members who are seniors) can be regarded as the third in a series of repeated cross-sections of 12th graders. That is to say, the status of NELS:88 *second follow-up* seniors in 1992 can be compared to HS&B base year seniors in 1980, and to NLS-72 seniors in 1972. Longitudinally (1-B), change for NELS:88 1990 sophomores two years later (that is, in 1992, when the cohort included both students and dropouts) can be compared to changes measured in 1982 from a 1980 HS&B sophomore baseline.

2) *Fixed time comparisons* are also possible in which groups within each study are compared to each other at different ages though at the same point in time. Thus NLS-72, HS&B senior cohort, and HS&B sophomore cohort sample members could all be compared in 1986, some 14, 6, and 4 years after each respective cohort completed high school. (For example, employment rates in 1986 of 22, 24, and 32-year old high school graduates can be contrasted.) The only available fixed time comparison using NELS:88 data, however, involves contrasting HS&B *fourth follow-up* and NELS:88 *second follow-up* 1992 results. One might, for example, compare the 1992 educational expectations of the two cohorts to explore how 17-18 year olds differ from 27-28 year olds in this respect. Or one might utilize the 1992 life values responses (questions concerning the importance to the respondent of being successful in work, having a lot of money, having strong friendships, and so on) to compare HS&B *Fourth Follow-Up* sophomore cohort members with NELS:88 *Second Follow-Up* survey participants.

3) Finally, *longitudinal comparative analysis* of the cohorts can be performed by modeling the history of the age/grade cohorts.

NELS:88 trend comparisons need not, however, be strictly limited to NLS-72 and HS&B. Comparisons are also possible using transcripts data collected for high school seniors, not only for HS&B 1982 graduates and NELS:88 1992 graduates, but also for 1987, 1990, and 1994 graduates in NAEP schools.[24] Other national probability samples as well may provide comparison points.[25]

---

[24] Care has been exercised in designing and implementing the academic transcript study in NELS:88 to maximize the comparability of NELS:88 transcript data with the high school transcript data for 1987 and 1990 graduating seniors. While an independent high school transcript study was not conducted in NLS-72, course-taking summary information was collected from school records for the 1972 seniors. For a detailed account of cross-cohort transcript comparison issues, see Ingels and Taylor, 1995.

[25] For example, major national studies of high school seniors, employing test and survey measures, were conducted in 1960 (Project Talent) and 1965 (the Equality of Educational Opportunity Survey) (see Schrader and Hilton in Hilton [ed.] 1992 for a discussion of comparability issues); also, the high school graduating classes of 1975-94 have been surveyed (and followed up as young adults) by Monitoring the Future: A Continuing Study of the Lifestyles and Values of Youth, a key source of trend data on, in particular, drug use and associated factors. (The study added 8th- and 10th-grade cohorts in 1991). Items that are strictly comparable across such data sets are, however, uncommon. Beginning in 1987, the Longitudinal Study of American Youth (LSAY) collected student, parent, and teacher data for cohorts of seventh and tenth graders (see Miller et al., 1992). Although the data are

Table 1: Types of possible NELS:88 trend comparisons to NLS-72 and HS&B

I. Cross-Sectional Comparisons

A. *Cross-Cohort Time-Lag Comparisons*

1. 1980/1990: 1980 sophomores versus 1990 Sophomores[26]
2. 1982/1992: 1980 Sophomores Two Years Later versus 1990 Sophomores Two Years Later
3. 1979/80-82 Continuous High School Careers of 1980 Sophomores versus 1989/90-1992 Continuous High School Careers of 1990 Sophomores: Transcript Comparison
4. 1972/1980/1992: 1972, 1980, and 1992 Seniors[27]
5. 1972/1982/1992: High School Seniors; Adjustment for nonrepresentativeness of 1982 senior sample[28]
6. 1974/1982(1984)/1994: High School Seniors Two Years Later
7. 1984/1994: High School Sophomores Four Years Later
8. 1986/1998: High School Seniors Six Years Later

B. *NELS:88 Fixed-Time Comparison to HS&B:*

HS&B 1992 (*fourth follow-up*, ten years out of high school) versus NELS:88 1992 (*second follow-up*, modal grade = high school senior)

---

roughly contemporaneous with those of NELS:88 and the primary emphasis limited to science and mathematics, LSAY contains a number of NELS:88 (and HS&B) comparison items. In contrast to NELS:88's biennial data collections, LSAY provides annual data points that may help to map trends more precisely and to demarcate transitions. The Prospects study, a nationally-representative multicohort longitudinal evaluation of Chapter 1 (now Title 1) with its first data collection in 1991, utilized many items from the NELS:88 questionnaires and thus provides a number of comparable data elements at several comparison points (e.g., eighth graders in 1992 versus eighth graders in 1988). Prospects supplies a rich perspective on student populations receiving compensatory education services from the Federal government or through programs sponsored by the school district. (See Puma, Jones, Rock and Fernandez, 1993). NLSY79 (household rather than school based) also traces the transition of high school-age youth into postsecondary education (CHRR, 1993) and the labor market, as will NLSY96 for a new cohort of adolescents.

[26] Must exclude all NELS:88 students who are nonsophomores and all nonstudents (dropouts).

[27] Must exclude all NELS:88 *second follow-up* dropouts (including alternative completers), early graduates, and students who were not 12th graders in the spring term of 1992.

[28] NELS:88 conditions as above (seniors only); HS&B must exclude dropouts and nonseniors and statistically adjust for non-representativeness of sophomore cohort.

Table 1 (continued): Types of possible NELS:88 trend comparisons to NLS-72 and HS&B

II. Longitudinal Comparisons

Longitudinal comparative analysis of the four cohorts can be performed by modeling the history of the age/grade cohorts. (Also, comparisons IA[2] above, involving use of change data in a time-lag comparison, may be viewed as having a longitudinal dimension.)

Possible Time Points for Comparative Analyses

Institution-level comparisons. Comparisons are not limited to cohorts of individuals; the student samples as well as the baseline school samples of NELS:88, HS&B, and NLS-72 are nationally representative, and considerable data have been collected about school-level characteristics. However, the only natural comparison points are of NLS-72 (1972) and HS&B (1980) high schools, since the NELS:88 *base year* school sample was limited to eighth grades.[29]

Table 2: Nationally-representative school samples in NELS program database

	Representative School Sample	Nonrepresentative School Sample
NLS-72	1972	
HS&B-Sr	1980	
HS&B-So	1980	1982[30]
NELS:88	1988	1990, 1992

---

[29] However, the 1988 NELS:88 school sample might be compared to other data sets, such as the ongoing series of NCES Schools and Staffing Surveys.

[30] A probability subsample of the 1982 HS&B schools was resurveyed in the 1984 Administrator and Teacher Survey. In an institution-level longitudinal follow-up, these schools were resurveyed in 1992, as part of the National Longitudinal Study of Schools (NLSS). Unlike HS&B in 1982 and 1984, NLSS freshened the HS&B school sample to make it nationally representative of public and private secondary schools in the United States in 1992.

Table 3: Comparison Points

National Education Longitudinal Studies Program

Students	NLS-72	HS&B-So	HS&B-Sr	NELS:88
G8				**1988***
G10		___1980*___		___1990*___
G12	___1972*___	___1982___	___1980*___	___1992*___
G12 + 1	1973			
G12 + 2	___1974___	___1984___	___1982___	___1994___
G12 + 4	___1976___	___1986___	___1984___	
G12 + 6			___1986___	___1998___
G12 + 7	1979			
G12 + 10		1992		
G12 + 14	1986			
Dropouts				
G10 - G12		___1982___		___1992___
follow-up		___1984___		___1994___
		(1986, 1992)		(1997)
Early Graduates		___1982___		___1992___
Parents of seniors[31]		___1980___		___1992___

High School Transcripts Studies

	HS&B	NAEP'86	NAEP'90	NELS:88	NAEP'94
Seniors in:	___1982___	___1987*___[32]	___1990*___	___1992*___	___1994*___

Note: Comparison points are in bold italics. Fully representative grade samples are marked by an asterisk. The 1982 and 1987 samples only approximate representative samples of high school seniors. A further NAEP transcript study is planned for 1996.

---

[31] For a crosswalk between the HS&B and NELS:88 parent questionnaires, see Appendix D of Ingels, Thalji, Pulliam, Bartot & Frankel; for a comparison of the design and implementation of the parent surveys, see section 4.4 of same.

[32] Based on the population of students in 11th grade and/or age 17 in 1985-86.

Individual-level comparisons. In Table 3, natural comparison points are highlighted. However, with technical adjustments, comparability can oftentimes be achieved even when age/grade/stage parallelism has not been strictly maintained.[33] In addition, survey rounds that coincide with a grade-representative sample are noted by an asterisk. Thus, HS&B (sophomore cohort) in 1980 and NELS:88 in 1990 are nationally-representative samples of sophomores; NLS-72 in 1972, HS&B (senior cohort) in 1980, and NELS:88 in 1992 comprise nationally representative samples of seniors. The NELS:88 sample was freshened to make it representative of the nation's sophomores (1990) and seniors (1992). Sample freshening was not conducted in HS&B and the sophomore cohort does not constitute a valid probability sample of the nation's 1982 seniors. Nevertheless, 1982 HS&B sophomore cohort and 1992 NELS:88 can be compared, because both examine a nationally representative sample of sophomores two years later--consisting of students (most, but not all of them, seniors), early graduates, and dropouts.[34] HS&B 1982 seniors can also be compared to 1972 NLS-72 and 1992 NELS:88 seniors, though not without some sample and statistical adjustments.[35]

There are two major kinds of differences between NLS-72, HS&B, and NELS:88 that must be taken into account. One difference pertains to the sample and research designs, and the other to differences in questionnaire or cognitive test content that may affect the possibility of drawing valid comparisons. Data users who are familiar with NLS-72 and HS&B will find that despite the considerable similarity between these studies and NELS:88, there are also significant sample definition and statistical design differences, which analysts who intend to compare these cohorts should note. Similarly, while some effort has been made to maintain trend items over time, strict test and questionnaire overlap across the three studies is not considerable.

Differences in sample design. The overall sample design for NELS:88 is essentially similar to the design employed in HS&B and NLS-72. In the base year, students were selected through a two stage stratified probability sample, with schools as the first units and students within schools as the second stage units.

In NLS-72, all *base year* sample members were spring term 1972 high school seniors. In HS&B, all members of the student sample were spring term 1980 sophomores or seniors. Because NELS:88 began at eighth grade, its follow-ups encompass (like the HS&B sophomore cohort two years later [1982]) students (both in the modal grade progression sequence, and out of sequence) and dropouts. HS&B was designed to provide two separate cohorts--a representative sample of 1980 sophomores and a representative sample of 1980 seniors. NELS:88 is designed to provide a representative sample of 1988 eighth graders, a further representative sample of 1990 sophomores, and finally a representative sample of 1992 seniors. In the HS&B *first follow-up*, students were not added to the original sample (that is, the 1980 sophomore cohort sample was not freshened in 1982 with seniors who had not been sophomores two years before and who therefore had no chance of selection into the HS&B Base Year sample). However, in NELS:88, owing to the desire to provide sample representativeness at three distinct points in time, new students can enter the study at tenth grade through two routes: sample freshening (addition of 1990 tenth graders who were not 1988 eighth graders or who were not in the United States in 1988) and change of eligibility status.[36]

---

[33] See, for example, the account by T.L. Hilton and J.M. Pollack on estimating postsecondary enrollment change over time using NLS-72 *fourth follow-up* (conducted over seven years after graduation) and HS&B *third follow-up* (conducted just less than six years after high school graduation) data, in Hilton (ed.) 1992.

[34] There are a number of special definitional issues in comparing NELS:88 and HS&B dropouts. For a detailed discussion of these issues, see *Conducting Trend Analyses: HS&B and NELS:88 Dropouts*, (Ingels and Dowd, National Center for Education Statistics, 1995).

[35] Specifically, out-of-sequence students (nonseniors) and nonstudents (such as dropouts and early graduates) must be removed from the HS&B analysis sample, and an adjustment made for the exclusion of students who were seniors in 1982 but were not part of the HS&B base year sampling frame, that is, 1982 seniors who were not 1980 sophomores in the U.S. A simplifying assumption here would be that in results and characteristics, these out-of-sequence 1982 seniors are essentially similar to the HS&B 1980 sophomores who failed to progress in the modal grade sequence.

Thus, while the base year designs of the three studies were essentially similar, because an eighth-grade baseline was chosen for NELS:88 and a high school baseline for NLS-72 and HS&B, two further differences arise when one compares the NELS:88 follow-up rounds with the other studies:

1) the more variable, typically smaller and unrepresentative within-school samples in NELS:88 *first and second follow-up* as contrasted to the more uniform, larger, and representative within-school student samples of HS&B[37] and NLS-72 (see Table 4).

2) the fact that, unlike HS&B in 1980, NLS-72 in 1972, or NELS:88 in 1988, NELS:88 1990 and 1992 high schools do not constitute a probability sample of schools;

In addition, despite the fundamental similarity of the base year designs, there were some differences in school and subgroup sampling and oversampling strategies across NLS-72, HS&B, and NELS:88.[38] Such differences are documented in detail in the various sampling, technical, and comparative analysis reports (listed in the reference section of this appendix) associated with each study, and such differences have implications for intercohort analysis. For example, the NELS:88 sample of high schools lacks national generalizability; school-level contrasts should therefore not be drawn between 1972 and 1980 high schools in NLS-72 and HS&B, on the one hand, and NELS:88, on the other. Likewise, subtle differences in stratification schemes limit comparisons that can be made. NELS:88 contains an Asian oversample, but HS&B and NLS-72 do not. NELS:88 contains a substantial oversample of non-Catholic private schools, a school type much more thinly represented in the other two studies.

There are special considerations in comparing the NELS:88 and HS&B dropout and early graduate populations. In the NELS:88 *second follow-up*, dropouts who had obtained alternative credentials such as a GED were administered the student rather than the dropout questionnaire, along with the early graduate supplement--though classified as completers and appearing on the student data set in NELS:88, GED completers were not part of the student sampling frame for HS&B in 1980 or NLS-72, and therefore must be excluded from trend comparisons of seniors. (In HS&B's *first follow-up* [1982] such sophomore cohort alternative completers were administered the dropout questionnaire.) Questionnaire assignment in the two studies is summarized in Table 5.

---

[36] For further information on sample freshening, see chapter 3 of the NELS:88 *First Follow-up or Second Follow-up Student Component User's Manuals*.

[37] The HS&B 1980 sophomore and senior samples are fully in-school representative, but the HS&B sophomore 1982 *(first follow-up)* sample is not, because transfers into the school had no chance of selection into the sample.

[38] An important additional difference, that may carry some consequences for comparability but will little affect analytic strategies, involves student sample replacement strategies. NLS-72, unlike HS&B and NELS:88, permitted replacement of noncooperating students under certain circumstances. While HS&B and NELS:88 made no attempt to replace students who refused to be part of the survey, HS&B did permit, but NELS:88 did not permit replacement of selected students who subsequently died, were discovered to have been listed in error, or who dropped out of school after selection but prior to the survey session. HS&B and NELS:88 also conducted a sample update to accommodate transfers into the Base Year schools between the sample selection and data collection phases of the studies.

Use of appropriate subgroup membership flags permits the analyst to define dropouts in the same way in both HS&B and NELS:88; however, for respondents such as GED holders, some items that otherwise would be available cannot be compared because the dropout questionnaire was not administered to this group in NELS:88. On the other hand, NELS:88 GED recipients should be excluded from comparison with HS&B early graduates. It is also possible to manipulate HS&B data so that a non-HS&B dropout definition is used in which individuals in nondiploma alternative arrangements are *not* regarded as dropouts. (For details, see Ingels and Dowd, 1995.)

Overall differences in cluster size are summarized in Table 4. For NLS-72, the target sample size was 18 students per school; for the HS&B *base year*, the target was 36 students per school; and for NELS:88, the target sample size was 24 eighth graders (or 26.2, counting the Asian-Hispanic oversample). Numbers selected and participating for the baseline and senior surveys of the three studies are summarized in Table 4.

NLS-72, HS&B, NELS:88 Content Overlap. Content (and format) overlap across the three studies should be viewed in terms of questionnaire, cognitive test, and transcripts data.

Questionnaire Overlap. There are many topics that are covered in one study but not the others, or that are covered by questions that are substantially (or subtly) different. Nonetheless, a core of items is comparable across all three, and a larger number of items comparable across HS&B and NELS:88.[39]

Some items are repeated in identical form across the studies. Others appear to be essentially similar despite small differences in wording or response categories; analysts must exercise their own cautious judgments about such cases. For a number of items with like question wording, dissimilar response categories were employed. In many such cases, comparability can be achieved by recoding the response categories so that they are compatible.

The crosswalk provided in Appendix E of the *Second Follow-Up: Student Component Data File User's Manual* identifies items that are plausibly similar across studies (or waves or components). Again, researchers must exercise their own cautious judgment before choosing comparison items. While most items listed in the crosswalk are transparently comparable (for example, the 10 life values items in NLS-72 were repeated almost without change[40] in stem or response categories in HS&B in 1980 and NELS:88 in 1992), other items are more problematic for comparisons. It may be useful to illustrate this issue by providing a few examples of potentially problematic comparisons.

The homework questions in NLS-72, HS&B, and NELS:88 provide one example of problematic comparability. NLS-72 asked "Approximately what is the average amount of time you spend on homework a week?" and provided response categories of "No homework is ever assigned, I have homework but don't do it, less than 5 hours a week, between 5 and 10 hours a week, more than 10 hours a week." In HS&B the question stem was retained, and while additional response categories were provided, they can be mapped into the broader categories of the NLS-72. In the NELS:88 *first and second follow-ups*, homework was inquired about using a two-column response format that distinguished in-school and out-of-school, and cut points were used for the response options that do not readily map into the NLS-72 and HS&B scheme. It is possible to devise various schemes for trying to compare the NELS:88 homework results with the earlier studies. Nevertheless, there is no objective criterion against which to evaluate the success of any such mapping.

---

[39] For detailed discussions of item comparability issues for the 1980 and 1990 sophomore data, see Rasinski, Ingels, Rock, and Pollack, 1993; and Ingels, Scott, Lindmark, Frankel, and Myers, 1992, Appendix D.

[40] The one change in this series is represented by NELS:88 variable F2S40I which reads "Getting away from this community" whereas NLS-72 Base Year item BQ20I reads "Getting away from this area of the country," as does the HS&B item.

Future occupational expectations provide a second example of problematic comparability. There are items that ask about future occupational expectations in all three studies. Unlike the HS&B and NELS:88 items, the NLS-72 item is not keyed to a specific age and uses "like" instead of "plan or expect." Can the NLS-72 item be compared to NELS:88 nonetheless? Again, researchers must make their own judgments about comparability, and these judgments may depend in part on specific analytic objectives. For example, the NLS-72 questions would seem to license loftier or more wishful ambitions (the NLS-72 wording is "circle the one number that goes with the best description of the kind of work you would like to do"; the NELS:88 wording is "which of the categories below comes closest to describing the job or occupation that you expect or plan to have...when you are 30 years old"). In comparing NLS-72 and NELS:88 seniors, one finds that females have higher future occupational expectations in 1992 than in 1972. Since the wording of the NLS-72 item might be thought to minimize the large observed difference between women in the two cohorts, one might feel additional confidence that the trend toward higher female occupational expectations was real. Nonetheless, it remains possible to entertain at least some skepticism that these items are fully comparable, given that one instances aspirations and the other expectations, and that one is indefinite as to point in time and the other refers to age 30. Many more examples could be cited, but the larger point would remain the same--data users should assess carefully the comparison items listed in the crosswalk to ensure that they meet their analytic requirements.

Cognitive Test Comparability. IRT methods have been used to put mathematics, vocabulary, and reading scores on the same scale for 1972, 1980, and 1982 seniors.[41] Additionally, there are common items in the HS&B and NELS:88 mathematics tests that provide a basis for equating 1980-1990 and 1982-1992 mathematics results. In general, however, the tests used in the three studies differ in many ways. Though group differences by standard deviation units may profitably be examined, caution should be exercised in drawing time-lag comparisons for cognitive test data.

One particular caveat that should be entered concerns the NELS:88 mathematics and reading tests. NELS:88 used multiple, adaptive forms of these two tests, so that a broader range of ability could be measured. Due to such differences in methodology and item pool characteristics, subgroup differences (for example) that are detected by the NELS:88 math and reading tests may have a somewhat different meaning than differences registered in the earlier tests, and interpretation should be qualified accordingly.

The HS&B sophomore cohort and NELS:88 provide a strong basis for explaining changes in high school achievement over time. Both studies measure how much was learned over the last two years of high school, and provide a wealth of individual-level explanatory variables. However, in comparing HS&B and NELS:88 test results, differences between the two cohorts may not always be typical of longer term trends. Hence, one might consider using the NAEP trend line (the NAEP *trend sample* is based on multiple *age* cohorts, and provides data from as early as 1969) to locate the HS&B and NELS:88 cohorts. (For further information about NAEP trend data in mathematics, science, and reading, see Mullis et al. 1991 and 1994. Note also that for NELS:88 and NAEP 1992 mathematics achievement, NELS:88

---

[41] See Rock, Hilton, Pollack, Ekstrom and Goertz, 1985, for details.

provides a NAEP-equated score. (For an analysis of NAEP trends, using NELS:88 and NLSY79 to examine family [and implicitly school] effects on achievement trends, see Grissmer et al. 1994).

Transcript Comparability. The HS&B, NAEP (1987, 1990, 1994) and NELS:88 high school transcript studies were designed to support comparisons. Despite the large similarities between the four transcript studies, there are some differences in design and content that must be taken into account when planning comparative analyses. (For a detailed account, see Ingels and Taylor, 1995.)

Certain generalizations may also be made about course enrollment trends based on data collected for 1969 public school graduates in the Study of Academic Growth and Prediction (Hilton, 1971; Tuma et al. 1989), and based on transcripts of 1975-82 high school graduates in the Department of Labor's NLSY (CHRR, 1993).

Weights, Flags, and Unweighted (Sample) *N*s for Sophomore and Senior Cohort Comparisons. Table 6 sketches the weights, flags, and sample *N*s associated with sophomore and senior intercohort comparisons.

Need for caution in comparing data across cohorts. Accurate trend measurement faces several challenges. Sampling error tends to be more of a problem for intercohort comparisons than for intracohort, because there is sampling error each time an independent sample is drawn. Differences in two sample means estimated from independent samples will be a function not only of the real differences in means, but also the sampling errors associated with both measurements. Hence, small (but not therefore necessarily unimportant) differences may be harder to detect.

In estimating trends based on results from two or more sample surveys, a number of nonsampling errors also may arise. Differences in instrument format and wording, data collection mode, or methodology are potential sources of nonsampling error. While the requirements of change measurement dictate that the same measures be repeated in the same way, there are also strong disincentives to holding measures and methodologies constant. The goals, the subject, and the technology of education measurement do not remain static. The educational policy agenda changes over time; the manner and matter of education changes as curriculum content and instructional methods are revised; improvements arise--in survey methodologies, data capture technologies, and in measurement techniques--that promise large benefits if implemented. Finally, the instrument design process for NLS-72, HS&B, and NELS:88, which has proceeded through broad consensus of the user community at different points in time, militates against a strongly conservative approach to content, format, and methodology, and there is no correct or simple way to resolve all tensions between improved measurement and comparable measurement.

Hence, though the studies were designed to be as comparable as possible, caution must nonetheless be exercised in comparing NLS-72, HS&B, and NELS:88 data. Student response rates differed and the characteristics of the nonrespondents may also differ across the studies. While nonresponse adjustments in the weights serve to compensate for nonresponse, no adjustment procedure can do so perfectly. Item response rates for questions that appear in both surveys differ as well, and, in general, missing data have not been imputed. The accuracy of intercohort comparisons may also be influenced by differences in context and question order for trend items in the various student questionnaires; differences in test format, content, and context; and other factors such as differences in data collection methodology.

More specifically, there were differences in mode and time of survey administration across the four cohorts. For example, NELS:88 seniors were generally surveyed earlier in the school year than were

NLS-72 seniors (many NELS:88 seniors were surveyed in January and February of 1992, though survey work continued into May); NLS-72 Base Year seniors were surveyed quite late in the school year.[42]

NLS-72 survey forms were administered by school personnel; HS&B and NELS:88 survey forms were administered primarily by contractor (NORC) staff. In NLS-72, seniors marked answers on an answer sheet (separate from the test booklet) while in 1980 and 1982 (HS&B) and NELS:88, answers were marked in the test booklet. The inclusion of answers as an integral part of the test booklet is thought to have given a modest advantage to HS&B test takers (see Rock, Hilton, Pollack, Ekstrom, & Goertz, 1985, for further details). Other differences between the NLS-72 and the HS&B/NELS:88 tests include improved mapping in the latter tests and the procedure of blackening an oval versus blackening a box (Hilton, 1992, cites a study by Earles, Guiliano, Ree & Valentine, that indicates such format differences are significant for timed tests, accounting for about one half a standard deviation in difference of result).[43]

There are differences in questionnaire construction across the three studies. NLS-72 and NELS:88 senior questionnaires used skip patterns more extensively than did the HS&B senior instrument; the NELS:88 and HS&B questionnaires were longer than the NLS-72 questionnaire.

NLS-72 and HS&B senior cohort sample members were subjected to their first measurement as seniors; HS&B sophomores were administered their second measurement as seniors, and NELS:88 eighth graders their third. We do not believe that problems associated with repeated measurements (such as remembering past responses to individual items) are likely to be a difficulty, both because of the sheer number of test and questionnaire items asked, and the two year intervals between data collections. However, participation in a longitudinal study in theory may influence the survey member's subsequent behavior or attitudes. Because most NELS:88 1992 sample members had also been surveyed as eighth and tenth graders, such "panel effects"[44] are in principle possible with this group (as with HS&B sophomores two years later, in 1982). In contrast, 1972 and 1980 seniors (and 1980 sophomores) were new to NLS-72 or HS&B.

Any of these differences may, to some unknown extent, affect the comparability of the NELS data sets and make the task of accurate trend measurement more difficult to accomplish.

---

[42] Indeed, while in the spring 1972 *base year* 16,683 seniors in 1,061 schools completed an NLS-72 student questionnaire, 257 schools that could not (because, for example, their school year ended earlier in the spring) take part in the *base year* were added, in accordance with the original design--these seniors had now left their schools but they were asked some retrospective (senior year) questions. Such individuals--who redress the school frame undercoverage bias in the NLS-72 *base year*--do not appear on the NLS-72 base year files that would typically be employed for comparisons of high school seniors, although the presence of some retrospective data for these individuals permits refinement of comparisons grounded in 1972 data.

[43] The implications of context and format differences for trend comparisons have been well described in the NAEP literature--see especially A.E. Beaton and R. Zwick, 1990, *The Effect of Changes in the National Assessment: Disentangling the NAEP 1985-86 Reading Anomaly* (Princeton, N.J.: ETS, NAEP Report 17-TR-21), which discusses the effects of changes in item context, assessment booklets, and procedures. For some NAEP reading tests, the impact of such changes was apparently larger than the trend effects that were being measured.

[44] Discussions of longitudinal conditioning or panel effects (also known as "time in sample bias" or "panel conditioning")--for example, whether strong effects potentially exist or could affect data quality--may be found in Kasprzyk, D., Duncan, G., Kalton, G., & Singh, M.P., eds. *Panel Surveys*, 1989 (New York: Wiley). See especially contributions by B. Bailar; D. Cantor; D. Holt; A. Silberstein and C. Jacobs; L. Corder and D. Horvitz; and J. Waterton and D. Lievesley.

Table 4: Baseline and Senior Year Student Average Cluster Sizes (*N* sampled and *N* participating), NLS-72, HS&B, NELS:88

	Base Year Average Cluster Size		Senior Average Cluster Size		Senior Sample Representative	
	N Sampled	*N* Partic.	*N* Sampled	*N* Partic.	of Seniors	of School
NLS-72	17.9	15.7	17.9	15.7	Yes	Yes
HS&B Sr. Cohort	34.9	27.8	34.9	27.8	Yes	Yes
HS&B So. Cohort	35.2	29.6	25.4	24.3	No	No
NELS:88	25.1	23.4	11.4	11.0	Yes	No

Notes: ***NLS-72*** statistics are based on 1,061 participating Base Year schools, a student sample of 19,001, with student participation defined as completion of the student questionnaire (there were 16,683 questionnaire completers); see Riccobono, Henderson, Burkheimer, Place & Levinsohn, 1981, p.21. ***HS&B*** statistics reflect 1,015 participating Base Year schools; a base year sample of 34,981 seniors, of whom 28,240 participated; and a sophomore sample of 35,723, of whom 30,030 participated. In the HS&B *first follow-up*, the sophomore cohort was subsampled, with most base year nonparticipants removed from the sample. Hence 29,737 sample members were retained, of whom 25,150 were enrolled in 992 HS&B schools; 96 percent of these 25,150 students participated in the HS&B *first follow-up*. (The remaining 4,587 sample members were surveyed as dropouts, transfers out, or early graduates.) There was also some attrition, due to mergers and closings, in the school sample (975 base year schools remained in the school sample; additionally, 17 schools that had received pools of base year sample members were included in data collection activities). The 1982 cluster size reported for HS&B in the table above includes seniors and nonseniors because the sophomore cohort in 1982 did not constitute a nationally representative senior sample. ***NELS:88 second follow-up*** (1992) statistics are based on sample members who were in the 12th grade in the spring term of the 1991-92 school year in the contextual sample of schools. There were 15,643 seniors in 1,374 such schools, as well as an additional 378 nonseniors. NELS:88 Base Year statistics reflect 1,052 participating schools, an eighth grade sample of 26,432, of whom 24,599 participated. The NELS:88 senior sample in the table above is spring-based and therefore excludes early graduates, who should not be included in senior year trend comparisons with NLS-72 and HS&B (though of course the HS&B and NELS:88 early graduate cohorts can themselves be compared).

Table 5: Questionnaire Assignment in HS&B and NELS:88 Second Follow-Up

HS&B (1982)	Questionnaire	NELS:88 (1992)	Questionnaire
enrolled in high school	student	enrolled in high school	student
graduated early	student (including early grad supplement)	graduated early or have already received GED	student (including early grad supplement)
not enrolled in HS, but enrolled in GED preparation classes or other special program or have received GED	dropout	not enrolled in HS, but enrolled in GED preparation classes or other special program, but have *not* received GED or equivalent	dropout
dropout (haven't attended school for 20 consecutive days or more	dropout	dropout (haven't attended school for 20 consecutive days or more)	dropout

Table 6: Sophomore and Senior Comparisons

Sophomores		
	1980 Sophomores HS&B	**1990 Sophomores NELS:88**
Sample N	30,030*	17,544**
Weight	DESIGNWT	F1QWT
Flag	--	F1SEQFLG = 0

* HS&B *base year* participants on base year data files; postsecondary files reflect a *base year* subsample. Unweighted sample N for retained sophomores in postsecondary rounds who participated in 1980 = 14,102 (participation flag BYPART = 1, weight = BYWT).

** This N represents sophomore cohort cases (participants) delivered in the *first follow-up*. In the *second follow-up*, 1990 sophomores who were ineligible in the *base year* but deemed eligible for the *first follow-up* were added for a new total of 17,754 1990-participating sophomore cohort members.

Seniors			
	1972 Seniors NLS-72	**1980 Seniors HS&B**	**1992 Seniors NELS:88**
Sample N	16,683	28,240*	16,114**
Weight	W1	DESIGNWT	F2QWT
Flag	--	--	F2SEQFLG = 0

* HS&B *base year* participants on base year data files; postsecondary files reflect a *base year* subsample. Unweighted sample N for retained seniors in postsecondary rounds who participated in 1980 = 11,500, (participation flag BYPART = 1, weight = BYWT).

** This number excludes NELS:88 early graduates. Case N is for the public use file; there are 16,120 participants on the privileged use file.

References

NLS-72

Riccobono, J.; Henderson, L.B.; Burkheimer, G.J.; Place, C.; and Levinsohn, J.R. 1981. *National Longitudinal Study: Base Year (1972) Through Fourth Follow-Up (1979) Data File User's Manual.* Washington, D.C.: National Center for Education Statistics.

Williams, S.R., and Folsom, R.E. 1977. *Bias Resulting from School Nonresponse: Methodology and Findings.* Research Triangle Park, NC: RTI.

NLS-72 and HS&B

Ekstrom, R.B; Goertz, M.E.; and Rock, D.A. 1988. *Education and American Youth: The Impact of the High School Experience.* London, Philadelphia, and New York: Falmer Press.

Fetters, W.B.; Brown, G.H.; and Owings, J.A. 1984. *High School Seniors: A Comparative Study of the Classes of 1972 and 1980.* Washington, D.C.: National Center for Education Statistics.

Hilton, T.L., ed. *Using National Data Bases in Educational Research.* 1992. Erlbaum: Hillsdale, N.J., Hove and London.

Rock, D.A.; Ekstrom, R.B.; Goertz, M.E.; Hilton, T.L.; Pollack, J. 1985. *Factors Associated With Decline of Test Scores of High School Seniors, 1972 to 1980.* Washington, D.C.: National Center for Education Statistics.

Rock, D.A.; Hilton, T.L.; Pollack, J.M.; Ekstrom, R.B.; Goertz, M.E. 1985. *Psychometric Analysis of the NLS-72 and the High School and Beyond Test Batteries.* Washington, D.C.: National Center for Education Statistics.

West, J.; Diodato, L.; Sandberg, N. 1984. *A Trend Study of High School Offerings and Enrollments: 1972-73 and 1981-82.* Washington, D.C.: National Center for Education Statistics.

HS&B

Coleman, J.S.; Hoffer, T.; and Kilgore, S. 1982. *High School Achievement.* New York: Basic Books.

Fetters, W.B; Stowe, P.; and Owings, J.A. 1984. *Quality of Responses of High School Students to Questionnaire Items.* Washington, D.C.: National Center for Education Statistics.

Frankel, M.R.; Kohnke, L.; Buonanno, D.; and Tourangeau, R. 1981. *HS&B Base Year (1980) Sample Design Report.* Chicago: NORC.

Tourangeau, R.E.; McWilliams, H.; Jones, C.; Frankel, M.R.; and O'Brien, F. 1983. *High School and Beyond First Follow-Up (1982) Sample Design Report.* Chicago: NORC.

NELS:88

Ingels, S.J.; Abraham, S.Y.; Karr, R.; Spencer, B.D.; and Frankel, M.R. 1990. *NELS:88 Base Year Student Component Data File User's Manual.* Washington, D.C.: National Center for Education Statistics.

Ingels, S.J.; Scott, L.A.; Lindmark, J.T.; Frankel, M.R.; and Myers, S. 1992. *NELS:88 First Follow-Up Student Component Data File User's Manual.* Washington, D.C.: National Center for Education Statistics.

Ingels, S.J.; Dowd, K.L.; Baldridge, J.; Stipe, J.; Bartot, V., and Frankel, M.R. 1993 *NELS:88 Second Follow-Up Student Component Data File User's Manual.* Washington, D.C.: National Center for Education Statistics.

Kaufman, P. and Rasinski, K.A. 1991. *Quality of Responses of Eighth-Grade Students in NELS:88.* Washington, D.C.: National Center for Education Statistics.

Rock, D.A.; and Pollack, J.M. 1991. *Psychometric Report for the NELS:88 Base Year Test Battery.* Washington, D.C.: National Center for Education Statistics.

Spencer, B.D.; Frankel, M.R.; Ingels, S.J.; Rasinski, K.A.; and Tourangeau, R.E. 1990. *NELS:88 Base Year Sample Design Report.* Washington, D.C.: National Center for Education Statistics.

HS&B and NELS:88

Ingels, S.J.; Thalji, L.; Pulliam, P.; Bartot, V.H.; Frankel, M.R. 1994. *NELS:88 Second Follow-Up Parent Component Data File User's Manual.* Washington, D.C.: NCES. (Contains content cross-walk between HS&B and NELS:88 parent questionnaires.)

Ingels, S.J.; and Dowd, K.L. 1995. *Conducting Trend Analyses: HS&B and NELS:88 Dropouts.* Washington, D.C.: National Center for Education Statistics. (Working Paper Series, 95-07).

Rasinski, K.A.; Ingels, S.J.; Rock, D.A.; and Pollack, J.M. 1993. *America's High School Sophomores: A Ten Year Comparison, 1980-1990.* Washington, D.C.: National Center for Education Statistics.

NLS-72, and NELS:88

Green, P.J. 1993. *High School Seniors Look to the Future, 1972 and 1992.* Statistics in Brief series, Washington, D.C.: National Center for Education Statistics.

Transcript Studies

Ingels, S.J.; Dowd, K.L.; Taylor, J.R.; Frankel, M.R.; Bartot, V.H. 1995. *NELS:88 Second Follow-Up Transcript Component Data File User's Manual.* Washington D.C.: National Center for Education Statistics.

Ingels, S.J.; and Taylor, J.R. 1995. *Conducting Cross-Cohort Comparisons Using HS&B, NAEP, and NELS:88 Academic Transcript Data.* Washington D.C.: National Center for Education Statistics. (Working Paper Series, 95-06).

Jones, C.; Knight, S.; Butz, M.; Crawford, I.; Stephenson, B. 1983. *High School and Beyond Transcripts Survey (1982): Data File User's Manual.* Chicago: NORC.

Legum, S.; Caldwell, N.; Goksel, H.; Haynes, J.; Hynson, C.; Rust, K.; Blecher, N. 1992. *The 1990 High School Transcript Study: Final Technical Report.* Rockville, MD: Westat.

Thorne, J.; Rust, K.; Burke, J.; Marshall, R.; Caldwell, N.; Sickles, D.; Ha, P.; Hayward, B. 1989. *1987 High School Transcript Study Technical Report.* Rockville, MD: Westat.

Center for Human Resource Research, The Ohio State University (CHHR). 1993. *NLS Handbook 1993.* Columbus, Ohio.

Hilton, T.L. 1971. *A Study of Intellectual Growth and Vocational Development: Final Report.* Princeton, N.J.: Educational Testing Service. (ERIC ED 056 063).

Tuma, J.; Gifford, A.; Horn, L.; and Hoachlander, E.G. 1989. *Enrollment Trends in Vocational and Academic Education in American Public High Schools, 1969 to 1987.* Report to the National Assessment of Vocational Education, U.S. Department of Education by MPR Associates, Berkeley, California.

Grissmer, D.W.; Kirby, S.N.; Berends, M.; Williamson S. 1994. *Student Achievement and the Changing American Family.* Santa Monica, CA: RAND.

Other Trend Studies and Syntheses

Puma, M.J., Jones, C.C., Rock, D.A., and Fernandez, R. 1993. *Prospects: The Congressionally Mandated Study of Educational Growth and Opportunity -- Interim Report.* Washington, D.C.: Planning and Evaluation Service, U.S. Department of Education.

Miller, J.D., Hoffer, T., Suchner, R.W., Brown, K.G., and Nelson, C. 1992. *LSAY Codebook.* Volume 1: Student, Parent, and Teacher Data for Cohort One for Longitudinal Years One through Four (1987-1991); Volume 2: Student, Parent, and Teacher Data for Cohort Two for Longitudinal Years One through Four (1987-1991). DeKalb, Illinois: Northern Illinois University.

Mullis, I.V.S., Dossey, J.A., Foertsch, M.A., Jones, L.R., and Gentile, C. 1991. *Trends in Academic Progress.* NAEP report 21-T-01. Washington, D.C.: U.S. G.P.O.

Mullis, I.V.S.; Dossey, J.A.; Campbell, J.R.; Gentile, C.A.; O'Sullivan, C.; Lathan, A.S. 1994. *NAEP 1992 Trends in Academic Progress*, NAEP Report 23 - TR01. Washington, D.C.: U.S. GPO.

Appendix D:

Methodology Used in Report

Appendix D. Methodology Used in Report

Sample Used for Analysis

The analysis of NELS:88 in this paper was based on data from the cross-section of 1992 seniors, which comprises 16,114 cases. Data from the base-year senior cohort of HS&B 1980 were used, which includes 28,240 cases. Data for 1972 seniors were taken from the NLS-72 base year, which had a base year sample size of 16,683. All analyses using variables taken from the NELS:88 student questionnaire were conducted using F2QWT. Analyses of the HS&B data were conducted using DESIGNWT. Analyses using variables from NLS-72 used W1.

Statistical Procedures

Comparisons that have been tested for statistical significance to ensure that the differences are larger than those that might be expected due to sampling variation. The statistical comparisons in this report were generally based on the *t* statistic. Whether the statistical test is considered significant or not is determined by calculating a *t* value for the difference between a pair of means or proportions and comparing this value to published tables of values at certain critical levels, called "alpha levels." The alpha level is an *a priori* statement of the probability that a difference exists in fact rather than by chance.

To guard against errors of inference based upon multiple comparisons, the Bonferroni procedure[45] was used to adjust significance tests for multiple contrasts. This method corrects the significance (or alpha) level for the total number of contrasts made with a particular classification variable. For each classification variable, there are (K*[K-1])/2 possible contrasts (or nonredundant pairwise comparisons), where K is the number of categories. For example, if a classification variable such as race has five categories, K=5 and there are (5*4)/2=10 possible comparisons between the categories. The Bonferroni procedure divides the alpha-level for a single *t*-test (in this case, 0.05) by the number of possible pairwise comparisons (10) to derive a new alpha corrected for the fact that multiple contrasts are being made. In Tables 1-3, the Bonferroni procedure is used to adjust for the number of comparisons being made within a single table.

The *t* statistic between estimates from various subgroups presented in the tables can be computed by using the following formula:

$$t=\frac{X_1-X_2}{\sqrt{SE_1^2+SE_2^2}}$$

where X_1 and X_2 are the estimates to be compared and SE_1 and SE_2 are their corresponding standard errors.

---

[45] For detailed discussion, see, for example, Hays, W.L. (1988), *Statistics*. (4th ed.) New York: Holt, Rinehart, Winston.

For comparisons involving tested achievement, the chi-squared statistic was used to compare "effect sizes" or standardized differences between tests scores for various subgroups as follows[46]

$$\chi^2=\Sigma(w(d-\bar{d})^2)$$

where

$$\text{effect size} = d=(M_1-M_2)/SD_{pooled}$$

$$w=(2N)/(8+d^2)$$

$$\bar{d}=\Sigma(wd)/\Sigma w$$

M_1, M_2 are the means of the scores from the two groups being compared

$N = n_1 + n_2$

and $SD_{pooled} = \sqrt{((SD_1^2/N_{1_{WTD}}+SD_2^2/N_{2_{WTD}})/(N_{1_{WTD}}+N_{2_{WTD}}-2))}$

Standard errors for all tables are included in Appendix B. All standard errors have been calculated using a Taylor series approximation to adjust for the effects of the complex survey design. CTAB and SUDAAN programs were used to calculate these estimates. Because NELS:88 sampling employed a multi-stage stratified cluster design, the adjusted standard errors are generally higher than those that would be calculated using normal simple random sampling assumptions.

Nonresponse Bias Analysis

Comparisons were made between subgroups defined on the basis of whether the respondent had complete data for the achievement tests used in this report. The results are shown in Tables D.1 - D.3, below. A case was classified as "valid" if the respondent had scores for mathematics, reading, and the composite achievement measures; case were classified as "missing" if any one of these scores was missing.

The distribution of valid and missing cases was broken down by sex, race/ethnicity, and socioeconomic status. In 1972 and 1992, there were no statistically significant differences between these subgroups for any of the sex, race, or SES categories. However, in 1980, males had a significantly higher proportion in the missing group. This could have the effect of making the observed sex differences appear smaller than they actually were in 1980.

The proportion of missing cases was also significantly higher for blacks and for Hispanics, and significantly lower for whites, indicating that the former two groups may be underrepresented in the proficiency analyses for 1980.

Finally, the middle SES group may have been somewhat overrepresented, but since all of the analyses on SES in this report compare the high-SES group to the low-SES group, this should have no impact on the conclusions drawn with regard to socioeconomic status.

---

[46] A chi-squared test for the homogeneity of effect sizes, developed by L. Hedges for use in meta-analysis, was used to test the difference among the effect sizes. For details, see Wolf, F.M. (1988) *Meta-Analysis: Quantitative Methods for Research Synthesis*. Beverly Hills, CA: Sage.

Table D.1
Percent of Respondents (Standard Errors) with "Valid" or "Missing" Achievement Test Scores in 1972

	Total	Male	Female	Black	White	Asian	Hispanic	Low SES	Middle Two SES	High SES
Valid **(SE)**	95.6 (0.64)	50.0 (0.58)	50.0 (0.58)	8.4 (0.43)	86.2 (0.50)	0.9 (0.11)	3.4 (0.29)	24.2 (0.48)	51.3 (0.55)	24.5 (0.59)
Missing **(SE)**	4.4 (0.64)	47.1 (3.03)	52.9 (3.03)	15.2 (3.39)	77.0 (3.75)	1.4 (0.64)	5.6 (1.43)	29.9 (2.72)	51.3 (2.44)	18.8 (2.17)
Valid & Missing **(SE)**	100.0	49.9 (0.59)	50.1 (0.59)	8.7 (0.43)	85.8 (0.49)	0.9 (0.11)	3.5 (0.28)	24.5 (0.47)	51.3 (0.53)	24.3 (0.58)

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table D.2
Percent of Respondents
(Standard Errors) with "Valid" or
"Missing" Achievement Test Scores in 1980

	Total	Male	Female	Black	White	Asian	Hispanic	Low SES	Middle Two SES	High SES
Valid (SE)	86.8 (0.69)	47.4 (0.55)	52.6 (0.58)	10.9 (0.68)	81.2 (0.78)	1.3 (0.16)	5.9 (0.28)	27.1 (0.66)	48.8 (0.55)	24.2 (0.73)
Missing (SE)	13.2 (0.69)	53.2 (1.39)	46.8 (1.39)	16.6 (1.57)	71.7 (1.91)	1.7 (0.43)	9.5 (1.15)	29.9 (1.39)	43.7 (1.28)	26.3 (1.62)
Valid & Missing (SE)	100.0	48.1 (0.52)	51.9 (0.52)	11.7 (0.70)	79.9 (0.80)	1.3 (0.16)	6.3 (0.31)	27.4 (0.65)	48.1 (0.54)	24.4 (0.74)

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Table D.3
Percent of Respondents (Standard Errors) with "Valid" or "Missing" Achievement Test Scores in 1992

	Total	Male	Female	Black	White	Asian	Hispanic	Low SES	Middle Two SES	High SES
Valid **(SE)**	77.4 (0.74)	51.0 (0.66)	49.0 (0.66)	11.5 (0.77)	73.5 (1.08)	4.4 (0.33)	9.7 (0.73)	25.0 (0.77)	49.7 (0.75)	25.3 (0.90)
Missing **(SE)**	22.6 (0.74)	48.3 (1.40)	51.7 (1.40)	13.2 (1.57)	69.8 (1.89)	4.8 (0.51)	11.2 (1.00)	23.0 (1.30)	47.8 (1.54)	29.2 (1.39)
Valid & Missing **(SE)**	100.0	50.4 (0.61)	49.6 (0.61)	11.9 (0.78)	72.7 (1.08)	4.5 (0.31)	10.0 (0.69)	24.6 (0.72)	49.2 (0.70)	26.2 (0.84)

Source: National Center for Education Statistics, National Longitudinal Study of 1972; High School and Beyond, 1980 Senior Cohort; National Education Longitudinal Study of 1988, Second Follow-up, 1992.

Description of Variables Used in this Report

Classification Variables. Classification variables such as sex, race/ethnicity, region, type of school, and others listed below were used to define subgroups for comparison throughout this report. Except as specified below, these were taken directly from the student data file for the particular study; the variable names from those files are indicated following the descriptive variable names used in this report.

SEX:	NLS (1972): VAR1626.	
	HS&B(1980): BB083.	
	NELS(1992): F2SEX.	
HIGH SCHOOL PROGRAM:	NLS-72 (1972):	VAR1073.
	HS&B(1980):	BB002, grouping codes 3 through 9 into a single "vocational" category (code 3).
	NELS(1992):	F2S12A, combining codes 1, 13, and 15 to form code 1=general; combining codes 2 and 12 to form code 2=college preparatory; and combining codes 3 through 11 to form code 3=vocational.
RACE/ETHNICITY:	NLS-72 (1972):	VAR1625, combining codes 3, 4, and 5 into a single "Hispanic" category.
	HS&B (1980):	Respondents were classified into racial/ethnic groups based on variable BB089 (eliminating code 5), unless variable BB090 was coded 1 to 4, in which case the respondent was classified as Hispanic.
	NELS (1992):	F2R CE1.

In all three cohorts, the category "American Indian or Alaskan Native" was included for the purposes of computing percentages, but was omitted from the tables in this report due to inadequate sample size. Race-ethnicity estimates are approximations and were not adjusted in HS&B or NELS:88 to conform to an external source. Age cohort data are readily available for all major race/ethnicity classifications, but owing to differential dropout rates, proportions of seniors are less certain. NELS:88 estimates may be slightly high for Asians and low for blacks.

REGION:	NLS-72 (1972):	VAR1066.
	HS&B(1980):	CENRGN, combining codes 1 and 2 to form code 1=Northeast; combining codes 6 and 7 to form code 2=North Central (Midwest); combining codes 2, 4, and 5 to form code 3=South; and combining codes 8 and 9 to form code 4=West.
	NELS(1992):	G12REGON.

SOCIOECONOMIC STATUS: Socioeconomic Status was coded as quartiles based on the variable F2SES1. F2SES1 was constructed using base year parent data, when available. The following parent data were used: Father's education level, mother's education level, father's occupation, mother's occupation, and family income (data coming from BYP30, BYP31, BYP34B, BY37B, and BYP80. Education-level data were recoded according to the definition of BYPARED (with the exception of category "7", which was recoded as missing for F2SES1 calculations.) Occupational data were recoded using the Duncan SEI, as used in NLS 72, HS&B, and earlier rounds of NELS:88. Parent data were used to construct F2SES1 if at least one component was not missing. SES quartiles were redrawn for this analysis, to reflect the seniors-only portion of the 1992 NELS:88 sample. Socioeconomic Status was then recoded, with the two middle quartiles combined into a single "medium" category, based on the following variables.

NLS-72 (1972): VAR1070.
HS&B (1980): BBSES.
NELS (1992): F2SES1 was recoded into quartiles based on 1992 seniors only.

TEST SCORES (Reading and Mathematics): For NLS-72 and HS&B, the IRT Scaled Reading and Mathematics Formula Scores were used as reported in Tables 5-2 and 5-3 of Rock, D. A., et al. (1985), *Factors Associated with Decline of Test Scores of High School Seniors, 1972 to 1980*; Washington, D.C.: National Center for Education Statistics (CS 85-217). For NELS:88, variables F22XRIRR (Reading IRT Estimated Number Right) and F22XMIRR (Mathematics IRT Estimated Number Right) were used.

Reliabilities for the reading and math tests were as follows:

Study	*Reading*	*Math*
1972 (NLS-72)	.79	.86
1980 (HS&B Sr)	.79	.85
1992 (NELS:88)	.85	.94

(For further documentation of the NLS-72 and HS&B tests, see D.A. Rock et al., *Psychometric Analysis of the NLS and the High School and Beyond Test Batteries*, NCES 1985. For further documentation of the NELS:88 tests, see D.A. Rock and J.M. Pollack, *Psychometric Report for the NELS:88 Base Year Through Second Follow-Up*, NCES 1994. For caveats concerning trend comparisons of test results, see Appendix C of this report.)

TEST QUARTILE: Respondents were classified into quartiles based on a composite (average) of their scores on tests of reading and mathematics achievement, with the two middle quartiles combined into a single category, based on the following variables.

NLS-72 (1972): VAR0618 (Reading), VAR0620 (Mathematics).
HS&B (1980): EBREADSD (Reading), EBMTH1SD (Mathematics).
NELS (1992): F22XQURT (Composite Test Quartile).

Response Variables: The following variables represent the student's responses to various questionnaire items reported in the Student Component File for each study.

FACTORS CONSIDERED IMPORTANT WHEN CHOOSING A COLLEGE: The percentage estimates and standard errors in this report were calculated by generating two groups, those responding "very important" and those choosing any of the other valid responses for the following items.

How important is or was each of the following in choosing a school you would like to attend?

NLS-72	HS&B	NELS	
VAR0561	EB116A		College expenses (tuition, books, room and board).
		F2S59A:	Low expenses (tuition, books, room and board).
VAR0562	EB116B	F2S59B:	Availability of financial aid such as a school loan, scholarship or grant.
VAR0563			Availability of specific courses or curriculums.
	EB116C	F2S59C:	Availability of specific courses or curriculum.
VAR0564	EB116D		Reputation of the college in academic areas.
		F2S59L:	Strong reputation of the school's academic programs.
VAR0565	EB116E		Reputation of the college in athletic programs.
		F2S59D:	Strong reputation of the school's athletic programs.
VAR0571	EB116G		Able to live at home and attend the college.
		F2S59F:	Ability to attend school while living at home.

HIGHEST LEVEL OF EDUCATION RESPONDENT EXPECTS TO ATTAIN: The following variables were used to indicate the highest level of education expected by the respondent:

NLS-72: VAR0383, combining codes 1 and 2 into a single category indicating high school diploma or less; and combining codes 3 and 4 into a single category indicating some college work, but less than a 4-year degree.

HS&B: BB065, combining codes 1 and 2 into a single category indicating a high school diploma or less; combining codes 3 through 6 into a single category indicating some college work, but less than a 4-year degree; and combining codes 8 and 9 into a single category indicating a graduate/professional degree.

NELS: F2S43, combining codes 1 and 2 into a single category indicating a high school diploma or less; combining codes 3 through 7 into a single category indicating some college work, but less than a 4-year degree; and combining codes 9 and 10 into a single category indicating a graduate/professional degree.

MAJOR FIELD OF STUDY:

NLS-72 (1972): VAR0574.

HS&B(1980): BB120, combining codes 13 and 14 into a single "Health" category; and combining codes 22 and 23 into a single "Social Science" category.

NELS(1992): F2S62, combining codes 21 and 22 into a single "Social Science" category.

OCCUPATION RESPONDENT EXPECTS TO HAVE:

NLS-72: VAR0367

HS&B: BB062, combining codes 9, 10, and 14 into a single category of professional positions.

NELS: F2S64B, combining codes 9, 10, and 14 into a single category of professional positions.

PARTICIPATION IN EXTRACURRICULAR ACTIVITIES: The following items were used to classify respondents into two groups, participants and nonparticipants. Respondents were classified as participants if they indicated "active participation" (code 2 for NLS-72 and HS&B; code 3 for NELS) or "participation as a leader" (code 3 for NLS-72 and HS&B; code 4 for NELS). If more than one item is listed, participation for any of the items was treated as participation in the general category of activity:

Debating, Drama, Music:	NLS-72:	VAR0243
	HS&B:	BB032D, BB032E, BB032F
	NELS:	F2S30BA, F2S30BB
Student Government:	NLS-72:	VAR0248
	HS&B:	EB032K
	NELS:	F2S30BC
Honorary Clubs:	NLS-72:	VAR0245
	HS&B:	EB032H
	NELS:	F2S30BD
School Newspaper/ Yearbook:	NLS-72:	VAR0246
	HS&B:	EB032I
	NELS:	F2S30BE
Subject Matter Clubs:	NLS-72:	VAR0247
	HS&B:	BB032J
	NELS:	F2S30BG
Hobby Clubs:	NLS-72:	VAR0244
	HS&B:	BB032G
	NELS:	F2S30BH
Vocational Ed. Clubs:	NLS-72:	VAR0249
	HS&B:	BB032L
	NELS:	F2S30BI
Cheerleading:	NLS-72:	VAR0242
	HS&B:	BB032C
	NELS:	F2S30AC

Team Sports:
NLS-72: VAR0241
HS&B: EB032A, EB032B
NELS: F2S30AA, F2S30AB, F2S30AC, F2S30BJ, F2S30BK

(Note: The NELS variables for Team Sports and Cheerleading have a different set of codes than the other extracurricular activities. For these variables, codes 3 through 5 on any of the listed variables were classified into the participant group.)

PLANS TO ATTEND COLLEGE/VOCATIONAL SCHOOL NEXT YEAR: For NLS-72, VAR0385 was used, with the codes indicating plans for nonacademic pursuits immediately after high school (codes 1 through 4, 9, and 10) combined into a single category. The same was done for HS&B, using variable BB071.

For NELS, if the response to F2S49 indicated that the respondent planned to continue in school immediately following high school (code 1), then "Plans for Next Year" was coded using F2S61. An additional category was generated, indicating that the respondent did not plan to attend school the next year (as indicated by code 2 or 9 on F2S49). Responses of code 3 on F2S49 were coded as missing for this variable.

PLANS TO WORK NEXT YEAR: Respondents were classified into two groups: those who planned to work full time (NLS-72 VAR0385 codes 1, 2, or 3; HS&B BB071 codes 1, 2, or 3; NELS F2S51 code 1 or F2S51 code 9 in combination with F2S48A code 2 or 3); and those who did not plan to work full time the next year (NLS-72 VAR0385 codes 4 through 10, HS&B BB071 codes 4 through 10, NELS F2S51 code 2 or F2S51 code 9 in combination with F2S49 code 1).

VALUES: The percentage estimates and standard errors in this report were calculated by generating two groups, those responding "very important" and those choosing any of the other valid responses for the following items.

How important is each of the following to you in your life?:

NLS-72	HS&B	NELS	
VAR0313	BB057A	F2S40A:	Being successful in my line of work.
VAR0314	BB057B	F2S40B:	Finding the right person to marry and having a happy family life.
VAR0315	BB057C	F2S40C:	Having lots of money.
VAR0316	BB057D	F2S40D:	Having strong friendships.
VAR0317	BB057E	F2S40E:	Being able to find steady work.
VAR0319	BB057G	F2S40G:	Being able to give my children better opportunities than I've had.
VAR0320	BB057H	F2S40H:	Living close to parents and relatives.
VAR0322	BB057J	F2S40J:	Working to correct social and economic inequalities.

Appendix E:

Publications Using NELS:88 Data

APPENDIX E

NELS:88 Key Technical Documentation: Listing; NELS:88 Analysis Reports, Tabulations and Statistical Briefs: Listing and Content Abstract

LISTING OF KEY TECHNICAL DOCUMENTATION AVAILABLE FROM NCES

Ingels, S.J., Abraham, S., Rasinski, K.A., Karr, R., Spencer, B.D., and Frankel, M.R. *NELS:88 Base Year Data File User's Manuals*, 1990:
1988 Student Component: NCES 90-464;
1988 Parent Component: NCES 90-466;
1988 School Component: NCES 90-482;
1988 Teacher Component: NCES 90-484.

Spencer, B.D., Frankel, M.R., Ingels, S.J., Rasinski, K.A., and Tourangeau, R. *NELS:88 Base Year Sample Design Report*, 1990; NCES 90-463.

Rock, D.A., and Pollack, J.M. *Psychometric Report for the NELS:88 Base Year Test Battery*, 1991; NCES 91-468.

Ingels, S.J., Scott, L.A., Lindmark, J.T., Frankel, M.R., and Myers, S.L. *NELS:88 First Follow-Up Data File User's Manuals*, 1992:
1990 Student Component: NCES 92-030;
1990 School Component: NCES 92-084;
1990 Dropout Component: NCES 92-083;
1990 Teacher Component: NCES 92-085.

Ingels, S.J., Scott, L.A., Rock, D.A., Pollack, J.M., Rasinski, K.A. *NELS:88 First Follow-Up Final Technical Report*, 1994; Washington, D.C.: NCES 94-632.

Ingels, S.J., Dowd, K.L., Baldridge, J.D., Stipe, J.L., Bartot, V.H., Frankel, M.R. *NELS:88 Second Follow-Up (1992): Student Component Data File User's Manual*, 1994; NCES 93-374.

Ingels, S.J., Dowd, K.L., Stipe, J.L., Baldridge, J.D., Bartot, V.H., Frankel, M.R. *NELS:88 Second Follow-Up (1992): Dropout Component Data File User's Manual*, 1994; NCES 93-375.

Ingels, S.J., Thalji, L., Pulliam, P., Bartot, V.H., Frankel, M.R. *NELS:88 Second Follow-Up (1992): Parent Component Data File User's Manual*, 1994; NCES 94-378.

Ingels, S.J., Thalji, L., Pulliam, P., Bartot, V.H., Frankel, M.R. *NELS:88 Second Follow-Up (1992): Teacher Component Data File User's Manual*, 1994; NCES 94-379.

Ingels, S.J., Thalji, L., Pulliam, P., Bartot, V.H., Frankel, M.R. *NELS:88 Second Follow-Up (1992): School Component Data File User's Manual*, 1994; NCES 94-376.

Ingels, S.J., Dowd, K.L., Taylor, J.R., Bartot, V.H., Frankel, M.R. *NELS:88 Second Follow-Up (1992): Transcript Component Data File User's Manual*, 1995; NCES 94-377.

Ingels, S.J., and Dowd, K.L. *Conducting Trend Analyses: HS&B and NELS:88 Sophomore Cohort Dropouts*, 1995; Washington, D.C.: NCES Working Paper Series, 95-07.

Ingels, S.J., and Baldridge, J.B. *Conducting Trend Analyses: NLS-72, HS&B, and NELS:88 Seniors*, 1995; Washington, D.C.: NCES Working Paper Series, 95-05.

Ingels, S.J., and Taylor, J.R. *Conducting Cross-Cohort Comparisons Using HS&B, NAEP, and NELS:88 Academic Transcript Data*, 1995; Washington, D.C.: NCES Working Paper Series, 95-06.

Ingels, S.J., and Dowd, K.L. *NELS:88 Second Follow-Up Questionnaire Content Areas and Research Issues*, 1995, Washington, D.C.: NCES Working Paper Series, 95-04.

Rock, D.A., and Pollack, J.M. *NELS:88 Base Year through Second Follow-Up Psychometric Report*, forthcoming, 1995; Washington, D.C.: NCES 94-382.

Ingels, S.J. *Sample Exclusion and Undercoverage in NELS:88: Characteristics of Base Year Ineligible Students; Changes in Eligibility Status after Four Years*, 1995; Washington, D.C.: NCES 95-723.

NELS:88 Base Year Through Second Follow-Up Sample Design Report, forthcoming, 1995 Washington, D.C.: NCES 94-250.

LISTING OF ANALYTIC PUBLICATIONS

1. Hafner, A., Ingels, S.J., Schneider, B., and Stevenson, D.L. *A Profile of the American Eighth Grader*, 1990; NCES 90-458.

2. Rasinski, K.A., and West, J. *NELS:88: Eighth Graders' Reports of Courses Taken During the 1988 Academic Year by Selected Student Characteristics*, 1990; NCES 90-459.

3. Hoachlander, E.G. *A Profile of Schools Attended by Eighth Graders in 1988*, 1991; NCES 91-129.

4. Rock, D.A., Pollack, J.M., and Hafner, A. *The Tested Achievement of the National Education Longitudinal Study of 1988 Eighth-Grade Class*, 1991; NCES 91-460.

5. Kaufman, P., and Rasinski, K.A. *Quality of Responses of Eighth-Grade Students to the NELS:88 Base Year Questionnaire*, 1991; NCES 91-487.

6. McMillen, M. *Eighth to Tenth Grade Dropouts*, 1992; Statistics in Brief series, NCES 92-006.

7. Owings, J.A., and Peng, S. *Transitions Experienced by 1988 Eighth Graders*, 1992. NCES 92-023.

8. Kaufman, P., and Bradby, D. *Characteristics of At-Risk Students in NELS:88*, 1992; NCES 92-042.

9. Bradby, D. *Language Characteristics and Academic Achievement: A Look at Asian and Hispanic Eighth Graders in NELS:88*, 1992; NCES 92-479.

10. Horn, L., and Hafner, A. *A Profile of American Eighth-Grade Mathematics and Science Instruction*, 1992; NCES 92-486.

11. Horn, L., and West, J. *A Profile of Parents of Eighth Graders*, 1992; NCES 92-488.

12. Green, P.J. *High School Seniors Look to the Future, 1972 and 1992*, 1993; Statistics in Brief series, NCES 93-473.

13. McMillen, M., Hausken, E., Kaufman, P., Ingels, S., Dowd, K., Frankel, M. and Qian, J. *Dropping Out of School: 1982 and 1992*, Issue Brief series, 1993; NCES 93-901.

14. Rasinski, K.A., Ingels, S.J., Rock, D.A., and Pollack, J. *America's High School Sophomores: A Ten Year Comparison, 1980 - 1990*, 1993; NCES 93-087.

15. Rock, D.A., Owings, J.A., and Lee, R. *Changes in Math Proficiency Between Eighth and Tenth Grades*. Statistics in Brief series, 1994, NCES 93-455.

16. Finn, J.D. *School Engagement and Students At Risk*. 1993; NCES 93-470.

17. Rasinski, K.A. *The Effect of High School Vocational Education on Academic Achievement Gain and High School Persistence: Evidence from NELS:88*, 1994; Report to the Office of Research, U.S. Department of Education.

18. Ingels, S.J., Schneider, B., Scott, L.A. and Plank, S.B. *A Profile of the American High School Sophomore in 1990*, NCES, 1994; NCES 95-086.

19. Myers, D., and Heiser, N. *Students' School Transition Patterns between Eighth and Tenth Grades Based on NELS:88*, forthcoming 1994; NCES 94-137.

20. Green, P.J., Dugoni, B.L., Ingels, S.J., and Camburn, E. *A Profile of the American High School Senior in 1992*, NCES, 1995; NCES 95-384.

21. Scott, L.A., Rock, D.A., Pollack, J.M., and Ingels, S.J. *Two Years Later: Cognitive Gains and School Transitions of NELS:88 Eighth Graders*, 1995, NCES 94-436.

22. Green, P.J., Dugoni, B.L., and Ingels, S.J. *Trends Among High School Seniors, 1972 - 1992*. NCES, 1995; NCES 95-380.

23. Hoffer, T. *High School Seniors' Instructional Experiences in Science and Mathematics*. forthcoming, 1995.

24. Green, P.J., and Scott, L.A. *"At-Risk" Eighth Graders Four Years Later*, NCES, 1995; NCES 95-736.

25. Rock, D.A., and Pollack, J.M. *Mathematics Course Taking and Gains in Mathematics Achievement*. NCES, 1995; NCES 95-714.

26. Hoffer, T.B., Rasinski, K.A., and Moore, W. *Social Background Differences in High School Mathematics and Science Coursetaking and Achievement*. NCES, 1995; NCES 95-206.

ABSTRACTS[47] OF ANALYTIC PUBLICATIONS

1. Hafner, A., Ingels, S.J., Schneider, B., and Stevenson, D.L. *A Profile of the American Eighth Grader*, 1990; NCES 90-458.

   Descriptive statistics and associated analysis on American eighth graders are presented based on data from the 1988 National Education Longitudinal Study. The study will be repeated with the same cohort at 2-year intervals. Study variables cover attitudes, school performance, and activities of the eighth-grade students. In addition to direct student data, the study design incorporates data from students' school principals, parents, and teachers to identify additional factors that affect student achievement. In addition to a general statistical profile of the target population, statistics and accompanying analyses cover mathematics and reading performance, at-risk issues, school safety and climate, and high school and college plans. Focus is on circumstances under which children flourish and succeed. The study included a clustered, stratified national probability sample of about 800 public and 200 private schools. Almost 25,000 students participated in the base-year study. The sample represents the nation's eighth-grade population, totalling about 3 million eighth-graders in over 38,000 school in the spring of 1988. Results reveal that the American eighth-grade population is very diverse. One out of every five students is unable to perform basic arithmetic tasks, and 14% of the students are unable to perform basic reading comprehension tasks. Pertinent methodological discussions and associated data are appended. (Fifteen graphs and 69 data tables are included; 66p.)

2. Rasinski, K.A., and West, J. *NELS:88: Eighth Graders' Reports of Courses Taken During the 1988 Academic Year by Selected Student Characteristics*, 1990; NCES 90-459.

   This set of tables examines self-reports of coursework taken by a national probability sample of eighth graders in public and private schools in the United States. Statistics were obtained from the base-year student survey of the National Education Longitudinal Study of 1988 (NELS:88). Estimates in the tables are based on a sample of 24,599 students in 1,052 schools across the nation. Technical notes follow 45 pages of tables. Three basic sets of tables on self-reported course-taking are provided in the areas of: (1) mathematics, science, and computer education (Tables 1.1 to 1.5); (2) English, foreign language, history, social studies, and religion (Tables 2.1 to 2.5); and (3) arts, vocational education, and personal development (Tables 3.1 to 3.5). Within each set of tables, the first table shows course-taking across all schools. Subsequent tables show course-taking for public, Catholic, independent private, and other private schools. In addition to information about the sample, the technical notes contain information about survey design, response rates, variables used in the tables, and methods for estimating standard errors. An appendix contains standard errors of estimates and unweighted sample sizes for levels of classification variables. (68 p.)

---

[47] **Abstracts are taken from ERIC when available, otherwise from the NELS:88 bibliography maintained by NORC under the NELS:88 third follow-up contract.**

3. Hoachlander, E.G. *A Profile of Schools Attended by Eighth Graders in 1988*, 1991; NCES 91-129.

   As part of the National Education Longitudinal Study of 1988 (NELS:88), this study examined the schools attended by eighth-graders in 1988, the year during which the more than 25,000 eighth-graders of the cohort were first studied. NELS:88 provides information on 802 public schools, 105 Catholic schools, 68 other religious schools, and 60 private, non-religious schools. Throughout the report, the unit of analysis is the school rather than students or teachers. Most of the school data were provided by school administrators. The data are used to develop a profile of the schools attended by eighth- graders, with information about various aspects of the learning environment, school policies and programs, and administrators' assessments of school climate. In 1988, 87.9% of eighth-graders attended public schools, 7.6% attended Catholic schools, 2.9% attended other religious schools, and 1.5% attended private non-religious schools. The study shows that eighth-graders learned under a wide range of different conditions in both public and private schools. Fifty-six data tables and five graphs are included. Appendices contain technical notes, information about the accuracy of estimates and procedures, standard errors and unweighted "N"s, and 56 additional tables. (119 p.)

4. Rock, D.A., Pollack, J.M., and Hafner, A. *The Tested Achievement of the National Education Longitudinal Study of 1988 Eighth-Grade Class*, 1991; NCES 91-460.

   Sixty tables are presented, which examine the test achievement of a national probability sample of eighth graders in public and private schools. Statistics were obtained from the base-year student survey of the National Education Longitudinal Study of 1988 (NELS:88). Its purpose is to provide policy-relevant data concerning the effectiveness of schools, curriculum paths, special programs, variations in curriculum content, and/or mode of delivery in bringing about educational growth. The NELS:88 test battery includes four tests: (1) reading comprehension; (2) mathematics; (3) science; and (4) history/citizenship/government. This report is a tabular summary of achievement test scores for approximately 24,000 eighth graders from 1,052 schools. Results are grouped into: student background variables; parental involvement variables; and school characteristics and school climate. Reading and mathematics tables contain, in addition to mean scores, the percentage of each group scoring at each proficiency level and the standard error of the percentage estimate. Effect sizes are included to compare group differences. Technical notes on survey design, response rates, variables in the tables, significance testing, and methods for estimating standard errors and effect sizes follow the tables. (122 p.).

5. Kaufman, P., and Rasinski, K.A. *Quality of Responses of Eighth-Grade Students to the NELS:88 Base Year Questionnaire*, 1991; NCES 91-487.

   This report presents results of an examination of the quality of responses of eighth-grade students to a subset of variables available in the NELS:88 database. The quality of the data was assessed several ways. The correspondence between parent and student responses to similar items on the similar items on the survey instruments was examined. When data were available, the study examined consistency among responses to related items. Finally, the reliability of several scales created from NELS:88 data was assessed. The indicators of data quality suggest that NELS:88 data display a high degree of accuracy and consistency, comparing favorably with responses from the prior NCES longitudinal study, High School and Beyond Study (HS&B). The quality of student responses to items common to both studies was somewhat less for NELS:88 eighth-graders than for HS&B high school sophomores and seniors, with quality increasing with age, and, as expected from prior research, with reading ability and socioeconomic status. There are 39 tables of NELS:88 data and 2 illustrative bar graphs. (119 p.)

6. McMillen, M. *Eighth to Tenth Grade Dropouts,* 1992; Statistics in Brief series, NCES 92-006.

   This report presents data from the 1988 National Education Longitudinal Study (NELS:88), which started with an eighth-grade cohort and aimed to provide data on dropout experiences as students made the transition into high school and to examine the contextual school and family factors associated with dropping out. The report explains the parameters of the study, the survey methodology, and the data reliability. The data are presented in the following bar graphs: (1) 8th- to 10th grade cohort dropout rates by race/ethnicity and sex; (2) 8th to 10th grade cohort dropout rates by region and metropolitan status; and (3) 8th to 10th grade cohort dropout rates by eighth-grade school (public, Catholic, religious private, and non-religious private). (7 p.).

7. Owings, J.A., and Peng, S. *Transitions Experienced by 1988 Eighth Graders,* 1992. NCES 92-023.

   This brief report presents findings regarding two types of transitions experienced by students as they move between the eighth and 10th grades: continuing or dropping out of school and transferring between sectors. While 98% of public school students remained in public schools, over one-third of Catholic school eighth graders and over 25% of National Association of Independent Schools students transferred to public or other private schools. About 6% of all eighth graders were classified as dropouts by spring of their scheduled 10th-grade year. For most students, the move between eighth and 10th grades involves a change of schools and exposure to new educational settings. These transitions may have an impact on student learning and personal development. Consequently, differences in transition patterns and possible outcomes are of major interest. Data were obtained from the base year and first follow-up surveys of the National Education Longitudinal Study of 1988 (NELS:88), which began in 1988 with a sample of 1,052 schools and 24,599 eighth graders. In the spring of 1990, 17,424 students were studied in the first follow-up to determine their education status and progress, and school, community, and work experiences. Four tables present study data, and five graphs illustrate trends from 1988 to 1990. (13 p.).

8. Kaufman, P., and Bradby, D. *Characteristics of At-Risk Students in NELS:88,* 1992; NCES 92-042.

   The study described in this report examined the characteristics of eighth-grade students who were at risk of school failure. The study used data from the National Education Longitudinal Study of 1988, which is a large-scale, national longitudinal study begun in the spring of 1988 when 25,000 eighth graders attending public and private schools across the nation were surveyed along with the students' parents, teachers, and school principals. The students were re-surveyed in 1990, and the base year and follow-up data of NELS:88 taken together provide a wealth of information about eighth graders' as they move in and out of the U.S. school system and into the varied activities of early adolescence. This study, focused on at-risk students within the eighth-grade cohort, examined the following sets of variables: (1) basic demographic characteristics; (2) family and personal background characteristics; (3) the amount of parental involvement in the student's education; (4) the students' academic history; (5) student behavioral factors; (6) teacher perceptions of the students; and (7) characteristics of the students' schools. Black, Hispanic American, and Native American students and students from low-socioeconomic backgrounds were more likely to be at-risk. Male eighth graders were more likely to have low basic skills, but were no more likely to drop out. After controlling for sex and socioeconomic status, Black and Hispanic American dropout rates were found to be the same as that for Whites. However, even when controlling for sex and economic status, Black and Hispanic American students were more likely than White students to perform below basic proficiency levels. (Included are 15 tables in the text and 31 tables in 2 appendixes; 107 p.).

9. Bradby, D. *Language Characteristics and Academic Achievement: A Look at Asian and Hispanic Eighth Graders in NELS:88*, 1992; NCES 92-479.

This report examines the demographic and language characteristics and educational aspirations of Asian American and Hispanic American eighth graders and relates that information to their mathematical ability and reading comprehension as measured by an achievement test. Special attention is paid to students who come from homes in which a non-English language is spoken. Of the 1,505 Asian American students evaluated, 73 percent were reported as language minorities (LMs), while 77 percent of the 3,129 Hispanic American students evaluated were LMs. Of the LM students, 66 percent of the Asian Americans had high English proficiency as compared to 64 percent of the LM Hispanic Americans. Both Asian American and Hispanic American groups had 4 percent of LM students showing low English proficiency. Overall, the study found many similarities between the two groups. However, differences are apparent when data are divided along language proficiency, mathematics achievement, aspiration, and other measures. Statistical data are provided in 33 tables and 44 graphs. Appendices present selected survey questions, technical notes and methodology, and 109 standard error tables. (197 p.).

10. Horn, L., and Hafner, A. *A Profile of American Eighth-Grade Mathematics and Science Instruction*, 1992; NCES 92-486.

This report profiles the mathematics and science instruction received by eighth graders (11,414 eighth graders had teacher reports in mathematics and 10,686 in science) in public and private schools in 1988. A preface lists highlighted findings, tables, and figures included in the document. The body of the report consists of five chapters. Chapter I discusses the purpose and format of the report and limitations of the study. Chapters II and III examine the relationship of various aspects of mathematics and science instruction to students' socioeconomic status and race-ethnicity and type of school attended. Among the aspects examined were the major topics taught, average class size, hours per week attended, allocation of class time, assigned homework, availability of instructional materials, student attitudes toward mathematics and science, and teacher characteristics and qualifications. Chapter IV examines mathematics and science achievement test scores in relation to the various components of instruction measured in the study. Chapter V provides a descriptive profile of the mathematics curriculum, the science curriculum, teacher characteristics and qualifications, classroom characteristics, school type differences, and students' opportunity to learn based on the findings. Appendices that describe the methodology employed and standard errors of estimates reported in tables and figures in the text are provided. (121 p.).

11. Horn, L., and West, J. *A Profile of Parents of Eighth Graders*, 1992; NCES 92-488.

    This report profiles the family characteristics and the level of involvement reported by the parents of 1988 eighth graders, using the base year survey and dropout data from the first follow-up. About 93 percent of the parents of the first year sample were interviewed to provide information about home life and family experiences. This study examined child-directed involvement, including activities such as parent-child discussions and school-directed involvement such as parent-teacher association membership and volunteering in the school. There was some indication that parent involvement was related to whether or not students scored below the basic level in reading or mathematics proficiency, but there was a strong relationship between parent involvement and whether or not a student dropped out of school between the 8th and 10th grades. There are 26 tables and 18 figures presenting study findings. (121 p.).

12. Green, P.J. *High School Seniors Look to the Future, 1972 and 1992*, 1993; Statistics in Brief series, NCES 93-473.

    In light of the many changes of the past 20 years, it may be expected that plans of high school seniors for further education may have also changed, along with the kinds of jobs they expect to have and the things they regard as important. These questions are examined through data from the National Longitudinal Study of 1972 (NLS-72) and the National Education Longitudinal Study in 1988 (NELS:88), the 1992 Second Follow-Up. The proportion of seniors in academic or college preparatory programs was approximately the same in both years, although enrollment in the general track increased and enrollment in vocational education decreased. In 1992, there was little difference between the sexes in high school program placement. In 1992, only 5.3 of students reported that they would not attend some kind of school after high school, but in 1972, 18.9% had reported that they would not continue. Eighty-four percent in 1992 planned to go to college, compared with the 63% who planned to attend in 1972. Differences for females were dramatic, with female seniors in 1992 four times more likely to plan on graduate or professional school as in 1972. Nearly 60% in 1992 planned a professional career, compared with approximately 45% in 1972. Changes in values were most marked among women, who in 1992 espoused values closer to those traditionally held by men. One figure and three tables present data about the two populations. (6 p.)

13. McMillen, M., Hausken, E., Kaufman, P., Ingels, S., Dowd, K., Frankel, M. and Qian, J. *Dropping Out of School: 1982 and 1992*, Issue Brief series, 1993; NCES 93-901.

    In recent years, concern over students dropping out of school has increased. A primary focus is the size of the dropout population, a question that has been addressed in two National Center for Education Statistics (NCES) longitudinal studies. Both studies provide the data needed to consider the dropout experiences between the sophomore and senior years of two groups of students a decade apart in time. Over the 10 years between the 1980-82 High School and Beyond survey (HS&B) and the 1990-92 data from the National Education Longitudinal Study of 1988 (NELS:88) (follow-ups), there was a 43 percent reduction in the percent of sophomores who dropped out of school. The NELS:88 rate for the sophomore cohort of 1990 is 6.2 percent. Relative rankings for racial and ethnic groups did not change over the decade, and in both cohorts the dropout rates for Hispanics were higher than those for Whites and Asians. Rates for Blacks were between those of Hispanic Americans and Whites. In both periods, failure in school and dislike for school were major factors leading students to drop out of school. Pregnancy and marriage were important factors influencing females' decisions to leave school early. Three figures illustrate the discussion. (3 p.)

14. Rasinski, K.A., Ingels, S.J., Rock, D.A., and Pollack, J. *America's High School Sophomores: A Ten Year Comparison, 1980 - 1990*, 1993; NCES 93-087.

    This study of high school sophomores in 1980 and 1990 compares the experiences of students in the two cohorts, identifying changes in in-school and out-of-school activities, academic achievement, self-concept, values, plans, and aspirations. Similarities and differences between the two groups are documented using data from the National Education Longitudinal Study of 1988 (NELS:88) and High School and Beyond (HS&B, 1980). HS&B and NELS:88 sophomores are marked by basic demographic differences, including the smaller size of the NELS:88 1990 cohort, reflecting the baby bust of the 1970s, and a higher proportion of racial minority and poverty status sophomores in 1990. NELS:88 sophomores also reflect the influence of various waves of school reform since the late 1970s and early 1980s. Overall, the comparison paints a pictures that is in most respects encouraging in its portrayal of the high school academic orientation and postsecondary expectations of the 1990 sophomore class. Positive changes, however, are typically small or moderate in magnitude. Among the findings are: (1) general and college preparatory program placement has increased, at the expense of vocational program placement; (2) patterns of extracurricular participation changed especially in musical activities (31% in 1980 to 22% in 1990) and in hobby clubs (21% in 1980 to 7% in 1990); (3) changes in sophomores giving high importance to particular life values (e.g., marriage and family 83% rating this as very important in 1980, 72% in 1990); (4) small but statistically significant increase in the number of females aspiring to traditionally male-dominated non-professional occupations (15.6% in 1980 versus 18.% in 1990). Sixteen tables and 13 figures present data from the 2 studies. Three appendixes contain information about the survey sample sizes, standard errors, and other methodological and technical information. Appendix A contains an additional 20 data tables. (Contains 46 references; xiv, 98 p.)

15. Rock, D.A., Owings, J.A., and Lee, R. *Changes in Math Proficiency Between Eighth and Tenth Grades*. Statistics in Brief series, 1994, NCES 93-455.

    This publication illustrates use of the NELS:88 dichotomous proficiency scores for conducting achievement gain analysis (see Scott, Rock, Pollack and Ingels [entry 21] for an illustration of an alternative gain analysis strategy, the use of mathematics probability of proficiency scores). The findings presented in this report suggest that course-taking patterns in mathematics between eighth grade and the sophomore year of high school represent an important factor in explaining growth in math proficiency. For example, even after controlling for eighth-grade math proficiency, higher math gains were associated with course-taking patterns that reflected advanced level math courses. The report also suggests that eighth-grade students who have higher aspirations for postsecondary education are also more likely to show positive math gains. (20 p.)

16. Finn, J.D. *School Engagement and Students At Risk.* 1993; NCES 93-470.

    To examine the proposition that students who do not remain active participants in class or school may be at risk for school failure, regardless of status characteristics such as ethnicity or family income, two studies of engagement and achievement were conducted. The studies used a nationwide sample of eighth-grade students from the U.S. Department of Education's National Educational Longitudinal Study of 1988 (NELS:88) survey. The first study examined the association of participation in school and classroom activities with academic achievement in 15,737 eighth-graders attending public schools. The study found that participation and academic achievement were positively related, even after controlling for gender, ethnicity, and socioeconomic status. The second study examined behaviors that distinguish students who are at risk, but who are successful in school subjects, from their less successful peers. A sample of 5,945 eighth-graders identified as at risk by virtue of race, home language or socioeconomic status were classified as unsuccessful, passing, or successful, based on reading and mathematics achievement tests. It was found that achievement groups were distinct in terms of variety of classroom participation behaviors, out-of-class participation, and interactions with their parents regarding school. Three major conclusions were drawn from the investigation: (1) behavioral risk factors are indeed related to significant outcomes of schooling; (2) risk behaviors have their roots in the early school years or before; and (3) more attention should be given by educators and researchers to encouraging the potential of "marginal" students. Further research is needed to identify manipulable aspects of classroom and school processes that encourage student engagement. Appendices provide details of the measures used in the studies and the standard deviations and correlations of the measures. Contains 91 references. (117p.).

17. Rasinski, K.A. *The Effect of High School Vocational Education on Academic Achievement Gain and High School Persistence: Evidence from NELS:88*, 1994; Report to the Office of Research, OERI, U.S. Department of Education.

    This analysis of the effects of vocational education on academic achievement and high school persistence was prepared for the National Assessment of Vocational Education. Data from the NELS:88 high school transcript study were analyzed to assess the influence of vocational programs and vocational courses on gains in tested achievement in mathematics, science and reading. The analysis also addresses the issue of whether, regardless of their effect on achievement gain, vocational programs serve to keep students from dropping out of high school.

18. Ingels, S.J., Plank, S.B., Schneider, B., and Scott, L.A. *A Profile of the American High School Sophomore in 1990*, 1994; NCES 94-086.

    This cross-sectional report supplies descriptive analyses of the educational situation of a representative sample of the nation's 1990 sophomores (comprising 1988 eighth-grade cohort members who were in tenth grade in the spring term of 1990 and "freshened" sophomores, students new to the sample who were not in the base year sampling frame, either because they were not 1987-88 eighth graders or not in the United States). *Chapter 1* provides an in-depth view of tenth-grade learning and achievement in mathematics. *Chapter 2* supplies a summary of tenth-grade course-taking patterns and instructional practices in science, reading, social studies, and foreign language. *Chapter 3* explores the tenth grader's life outside of school, including the process of educational decision making. *Chapter 4* reports on sophomores' plans for the future, including their educational expectations and aspirations. Taken together, these four chapters provide a statistical profile of the American high school sophomore in 1990, which is summarized in *Chapter 5*. Appendices A and B provide technical notes and tables of standard errors of measurement and sample sizes for all reported population estimates. Appendix C contains further information about NELS:88 in general and the first follow-up in particular. Appendix D presents additional tabulations on reading and social studies achievement.

19. Myers, D., and Heiser, N. *Students' School Transition Patterns between Eighth and Tenth Grades Based on NELS:88*, 1994; NCES 94-137.

    Analysis of NELS:88 data makes it possible to explore the relationships between student and family characteristics and the likelihood of shifting among public and private schools as students progress from eighth to tenth grade. This study examines the characteristics of students who switch between sectors (public to private, or private to public) as they move from eighth to tenth grade. Five sets of variables were examined to estimate the association between variations in the students' transition patterns and student and family characteristics: (1) basic student and family background characteristics; (2) the amount of parental involvement in the student's education; (3) the student's academic achievement and educational expectations; (4) the characteristics of the student's school; and (5) parental satisfaction with the student's school. Examination of these characteristics permits four research questions to be addressed: (1) How many students shift between the public and private school sectors? How many students shift from one private school to another?; (2) Who shifts between sectors? Are family background factors, parental involvement, or students' academic achievement or educational expectations associated with variations in transition patterns?; (3) Are school characteristics associated with students' propensity to move between school sectors?; (4) Do parents who are dissatisfied with their children's school shift their children to another type of school?

20. Green, P.J., Dugoni, B.L., Ingels, S.J., and Camburn, E. *A Profile of the American High School Senior in 1992*, NCES, 1995; NCES 94-384.

    This report examines the background of 1992 high school seniors, the school environment which shaped their senior year experiences, the curriculum in which they were enrolled, their academic achievement, their plans and expectations for the future, and their non-academic experiences during this important period of development. *Chapter 1* provides a demographic profile of high school seniors. *Chapter 2* depicts their school and peer environment by recording seniors' perceptions of school, of the safety of their school, and of the values of their peers. *Chapter 3* describes their course and program enrollments. *Chapter 4* examines the tested achievement of 1992 seniors. *Chapter 5* describes their short-term plans--their postsecondary plans, steps they have taken to gain entrance to college, and factors they considered in choosing a postsecondary institution. *Chapter 6* reports on seniors' plans and expectations for the future. Finally, *chapter 7* describes the senior cohort's experiences outside of school--use of illicit drugs and alcohol, television viewing, jobs, participation in school government, and community volunteer work. Taken together, these seven chapters provide a statistical profile of the American high school senior in 1992. Appendices provide unweighted (sample) Ns and standard errors.

21. Scott, L.A., Rock, D.A., Pollack, J.M., and Ingels, S.J. *Two Years Later: Cognitive Gains and School Transitions of NELS:88 Eighth Graders*, 1994, NCES 94-436.

    This report describes the growth in cognitive skills and achievement, and the continuities and discontinuities experienced in school and at home by the NELS:88 eighth grade-cohort during the two years between the study's base year (1988) and first follow-up (1990) surveys. Four distinct topics are addressed, involving both school dropouts and persisters. (1) By 1990, some 1988 eighth graders were dropouts; this report describes their characteristics and the reasons they gave for dropping out of school. (2) This report presents findings on patterns of school transition--changing from a public eighth-grade school to a private high school or vice versa--and the changes in perception of safety and overall learning environment cohort members experienced after moving from a typically more homogeneous middle school environment to a more heterogeneous high school environment. (3) Additionally, this report summarizes major changes in home life and family, such as the divorce or remarriage of a parent, that also occurred during cohort members' transition to and/or early years of high school. (4) Finally, this report examines the 1988-90 achievement gain of the eighth-grade cohort, thus addressing several basic questions: How much did students gain in achievement in the two years following eighth grade?; Who gained, in what subjects, and (for mathematics) in what way (that is, at what skill or proficiency level)? The analysis of growth in achievement illustrates use of the NELS:88 continuous measure of probability of mathematics proficiency (see Rock, Owings and Lee [1994, entry 15] for an illustration of mathematics achievement gain analysis using NELS:88 dichotomous proficiency scores).

22. Green, P.J., Dugoni, B.L., and Ingels, S.J. *Trends Among High School Seniors, 1972 - 1992*. NCES, 1995; NCES 94-380.

    This report compares the NLS-72 1972, HS&B 1980, and NELS:88 1992 senior cohorts. It supplies a sociodemographic description of the three senior cohorts. The report compares the cohorts' high school program placement, course-taking and achievement, as well as participation in extracurricular activities. It also compares 1972, 1980 and 1992 seniors' plans for the next year, noting the proportions who planned to work full-time in the year following graduation, the type of postsecondary institution seniors planned to attend, college selection, and major field of study. Finally, the report compares the future educational and occupational aspirations of the three senior cohorts.

23. Hoffer, T.B. and Moore, W. *High School Seniors' Instructional Experiences in Science and Mathematics*, 1995.

    This study examines the instructional experiences of a national sample of 1992 high school seniors in the subjects of science and mathematics. The data analyzed are from the second follow-up survey of the National Education Longitudinal Study of 1988 (NELS:88). The information on instruction comes from the NELS:88 1992 survey of teachers, which collected questionnaires from the science and mathematics teachers of 9,853 sampled seniors enrolled in public and private high schools across the United States. Two general questions are addressed: Why do students' instructional experiences differ? and What consequences do the differences have for student academic achievement? Descriptive statistics on the relationships of students' family backgrounds, curriculum track level, and high school characteristics with instructional variables are presented. Regression analysis is used to estimate the effects of different instructional experiences on achievement score gains from 1990 to 1992.

24. Green, P.J., and Scott, L.A. ***"At-Risk" Eighth Graders Four Years Later***, NCES, 1995; NCES 95-736.

This publication in the NCES Statistics in Brief series extends to the 1992 second follow-up the analysis of "at risk" factors begun by Hafner, Ingels, Schneider, and Stevenson (1990) with the base year data and continued by Scott, Rock, Pollack and Ingels (1995) with the first follow-up data. Approximately 26 percent of eighth grade students had an "at risk" characteristic and 20 percent had two or more of these risk factors. Examining the outcomes of at-risk eighth graders four years later (1992), Green and Scott examine both achievement outcomes and social and behavioral outcomes. With respect to achievement, Green and Scott report that (1) approximately one in six adolescents with multiple risk factors were unable to comprehend basic written information, testing below the basic level in reading in 1992. In comparison, only about one in twenty of those with no risk factors were unable to demonstrate basic reading skills. (2) At-risk students were more likely than others in 1992 to test poorly in mathematics. Over half of those with multiple risk factors tested at the basic level, or below, In contrast, only about a fifth of those with no observed risk factors tested at that level. (3) Nearly one-third of students with multiple risk factors could not demonstrate even a "common knowledge" of science. Only 12.2 of students with no risk factors failed to demonstrate competence at this basic level. In respect of 1992 social and behavioral outcomes, and 1992 graduation status, Green and Scott report (1) Students who had multiple risk factors in 1992 were **no more likely** than others to report using illicit drugs (marijuana or alcohol), or to report abusing alcohol than those with no risk factors. (2) Eighth graders who had multiple risk factors in 1988 were more likely than others to have a child in 1992--18.9 percent compared to 5.4 percent. (3) Students with multiple risk factors were more likely than others to report being suspended, and being sent to a juvenile home or detention center. (4) Among 1988 eighth graders with no risk factors, ninety percent had earned a high school diploma by 1992. Among 1988 eighth graders with multiple risk factors, sixty percent had earned their high school diploma by 1992, while the other forty percent had not.

25. Rock, D.A., and Pollack, J.M. ***Mathematics Course Taking and Gains in Mathematics Achievement.*** NCES, 1995; NCES 95-714.

This publication in the NCES Statistics in Brief series extends to the 1992 second follow-up the analysis of 1988-1990 test score gains reported in Scott, Rock, Pollack and Ingels (1995). However, instead of self-report data on courses completed, Rock and Pollack utilize the results of the NELS:88 high school transcript study. Rock and Pollack found that when student gains in tested mathematics achievement were cross-classified by grade in school and highest level of mathematics course taken:

- Slightly over 60 percent of high school students do not go beyond the algebra 2/geometry level of coursework.

- Approximately 1 out of 9 students take a calculus course while in high school; about 1 out of 4 students, in contrast, never go past algebra in their high school career.

- Growth in arithmetic, algebra, and geometry achievement appears to be greater in the first two years of high school than in the last two years for almost all course-taking categories.

- Students who take the more advanced mathematics courses show greater gains, both between 8th and 10th grade, and between 10th and 12th grade.

- Students who do not take advanced courses make greater gains on test items dealing with computational skills, while students in the advanced courses make larger gains on test items requiring conceptual understanding and problem-solving skills. In fact, for these students, significant growth does not occur until they move into the pre-calculus level of coursework.

26. Hoffer, T.B., Rasinski, K.A., and Moore, W. ***Social Background Differences in High School Mathematics and Science Coursetaking and Achievement.*** NCES, 1995; NCES 95-206.

This publication in the NCES Statistics in Brief series uses NELS:88 test and transcript data to address two questions: (a) To what extent do students from different social backgrounds differ in the numbers of courses they complete during high school and in their final levels of academic achievement? And (b) Does additional coursework have comparable relationships to measured achievement gains during the high school years for students from different backgrounds. Hoffer, Rasinski and Moore report the following findings: (1) Gender differences in the numbers of science and mathematics courses students complete are not significant. Students from higher socioeconomic families, however, complete more courses in these subjects. (2) The numbers of math and science courses students complete in high school are strongly related to how much their test scores increase from the end of eighth grade to the end of senior year. (3) Additional coursework pays off about equally for all students in terms of increasing achievement gain, regardless of gender, race-ethnicity, and social class.

ISBN 0-16-048126-0

90000

9 780160 481260

207

United States
Department of Education
Washington, DC 20208–5651

Official Business
Penalty for Private Use, $300

Postage and Fees Paid
U.S. Department of Education
Permit No. G–17

Fourth Class Special
Special Handling

BEST COPY AVAILABLE